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10 March 1981

USSR Report

TRANSPORTATION

No. 36

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AIR

AIRCRAFT-TO-AIRCRAFT RADAR SYSTEM DESCRIBED

Moscow GRAZHDANSKAYA AVIATSIYA in Russian No 1, Jan 81 p 19

[Article by N. Bondarchuk, chief of ATB (air maintenance facility) sector, city of Mirnyy: "With Onboard Radar"]

[Text] The constantly growing requirement for air transportation and an increase in the amount of work involving the use of aviation in the national economy represent an objective prerequisite for a continuous increase in air traffic both in individual regions and throughout the country as a whole. This is why it is such an urgent matter to increase the reliability of control over the position of craft in the air space and, above all, their position with respect to each other.

By monitoring a flight with the most sophisticated radar, the UVD [air traffic control] dispatcher can determine the movement of aircraft in the air with a high degree of precision. Further improvement in flight control from the ground, then, is the primary reserve for improving supervision over the craft, but this matter can be resolved satisfactorily by the crews themselves as well. In particular, a crew obtains very valuable information in this regard by continuously monitoring radio communications with the ground, with air traffic control points.

It is possible to monitor aircraft in the air using equipment aboard modern airships. In particular, the airborne weather radar (BRLS) provides information about the surrounding air space. Aircraft flight operation manuals provide certain recommendations for use of the airborne radar to detect aircraft aloft and prevent a dangerous approach to them. But these recommendations are based on the fact that, using the BRLS, it is possible to determine with sufficient accuracy the position of the detected airship by range and azimuth, while the accuracy of determining the airships' mutual location by elevation (altitude) is not considered.

Is it possible to determine this accuracy and thus assess the objective possibility of using the radar to prevent a dangerous approach of airships? We will assume that the BRLS antenna, which forms an acicular radiation pattern, oscillates in a horizontal plane. The antenna's radiation pattern has a certain amount of width in the vertical plane, however, and so the BRLS performs a radar scan of the air space in elevation in a certain sector. This is why it is of practical interest to determine whether or not the radar detects only aircraft at the same altitude or whether or not there are airships in the field of view which may be nearby at adjacent flight levels.

In solving this problem, we must consider the aircraft to be a pinpoint radar target, i.e., a target with a size which can be ignored (in comparison with the distance to it). The basic radar equation for such targets in this instance (with consideration of the fact that in the BRLS one and the same antenna is used as transmitter and receiver) can be written in the following form: $R = R_0 F(\beta)$, (1)
where R is the range of target detection with a given probability; R_0 is the maximum detection range of this same target with the very same probability, when the target is in the direction of the peak of the antenna radiation pattern, i.e., in the direction OA (Fig. 1); and F (β) is the function describing the normalized antenna radiation pattern by field intensity in the vertical plane.

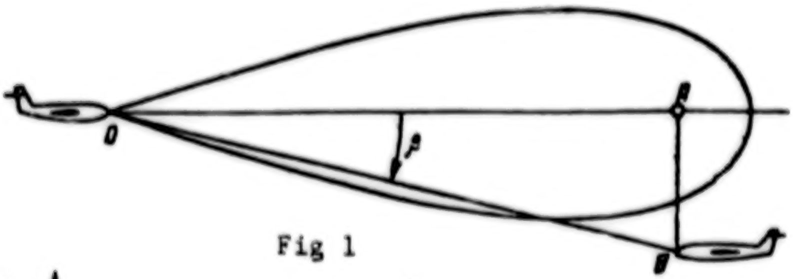

Fig 1

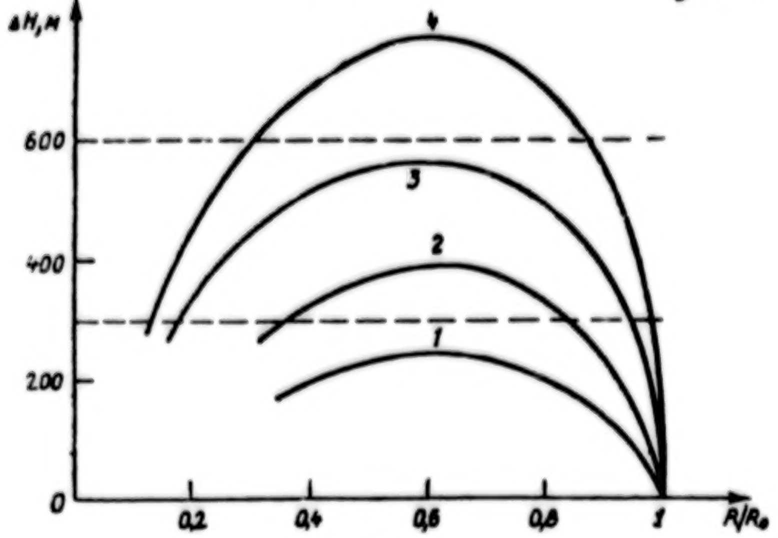

Fig 2

Ratio of ΔH to R/R_0 with different values of R_0 and β_0:
1 — $R_0 = 10$ км, $\beta_0 = 4{,}2°$; 2 — $R_0 = 15$ км, $\beta_0 = 4{,}1°$;
3 — $R_0 = 30$ км, $\beta_0 = 3°$; 4 — $R_0 = 30$ км, $\beta_0 = 4°2'$.

Here R_0 depends on the BRLS output characteristics as well as on the effective reflective surface of the target, which characterizes the targets' capability to reflect radio waves more or less intensively.

An acicular radiation pattern is approximated rather accurately analytically by a bell curve, i.e., $F(\beta) = e^{-0.35(2\beta/\beta_0)^2}$, where β is the angle between the direction of the antenna's radiation pattern peak and the direction to the aircraft to be detected; and β_0 is the width of the radiation pattern in power at the level of 0.5 from the peak.

Then equation (I) can be written in the following form:

$$R = R_0 e^{-0{,}35\,(2\beta/\beta_0)^2}. \qquad \text{(II)}$$

On the other hand, it follows from the triangle OAB (see Fig. 1):

$$\Delta H = R \sin \beta, \qquad \text{(III)}$$

where ΔH is the difference in altitudes of the aircraft on which the BRLS is located and which in Fig. 1 is located at point 0, and the aircraft being detected, located at point B.

Determining angle β from expression (II) and substituting its value into equation (III), we will obtain:

$$\Delta H = R \sin \sqrt{\frac{\beta_0^2}{1{,}4} \ln \frac{R_0}{R}}.$$

The latter expression makes it possible to determine the difference in flight altitudes of two aircraft ΔH, at which one of the aircraft is detected with the help of the airborne radar of the other aircraft (with a given distance between them of R). The values R_0 and β_0 in this expression are parameters for the BRLS of modern passenger aircraft and their values are within the ranges $R_0 = 10 \div 30$ км, $\beta_0 = 3 \div 4{,}2°$ (with other conditions being equal, the lesser value R_0 corresponds to the greater value β_0). The dependence of ΔH on relative detection range R_0/R with the indicated maximum and minimum values of β_0 and R_0 and the invariable probability of detection of one aircraft with the help of the BRLS of another is shown in Fig. 2. The conclusion can be drawn from this that an aircraft located at an adjacent flight level may be detected with BRLS at a considerable distance, which in some cases differs little from the range of detection of an aircraft located at the same altitude as the aircraft with the BRLS (in Fig. 2 the values ΔH corresponding to the difference of flight levels in altitude are denoted by dotted lines).

It is this condition which considerably limits the effectiveness of using the BRLS to prevent the dangerous approach of airships. In addition, the possibility of using the BRLS for these purposes is practically precluded at low flight altitudes, when rather bright clutter is observed on the screen from the surface of the ground and which conceals the blips of aircraft.

The BRLS thus can be used to prevent a dangerous approach of airships only as an auxiliary means, since in itself it does not ensure satisfactory accomplishment of this task. In addition, it should be remembered in using the BRLS for this purpose that even when the antenna scans in a horizontal plane, the radar can detect aircraft at an altitude differing hundreds of meters from that of the aircraft with the BRLS.

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AIR

WORK ON ANTONOV DESIGN BUREAU

Kiev RADYANS'KA UKRAYINA in Ukrainian 27 Dec 80 p 4

[Interview with O. K. Antonov by RADYANS'KA UKRAYINA correspondent M. Soroka: "Wings for Flying"]

> [Text] Our skies cannot be imagined without those tireless workers--the ANs; without the quick ubiquitous AN-2, which demands nothing of weather conditions; the light-winged AN-24, holding the flight record for "average distances"; or the powerful giant "Antey"... The take-off strip for those and a number of other popular air liner designs originates at the design bureau headed by Hero of Socialist Work, Lenin and State Prize winner, USSR Supreme Soviet Deputy Oleh Kostyantynovych Antonov.
>
> Antonov's planes. They transport almost half of all air passengers and hundreds of tons of important freight in our republic. They may be seen also on the air routes of many states in the world. But at the design bureau new research continues. New ideas and plans are born and refined. Persistent work continues on even better machine designs which would meet the high requirements of present day and future aviation. The chief aviation designer told RADYANS'KA UKRAYINA correspondent M. Soroka about this. But the conversation started rather unexpectedly: not with planes but with hang gliders.

"Look how sharply the popularity of hang gliding is growing," said Oleh Kostyantynovych. "A short time ago only individual enthusiasts were taking it up, and today hang glider flights have become a common occurrence, a mass enthusiasm. A federation for hang gliding has been formed; representative competitions are held in this particular sport. This is very good. Because, as a rule, by overcoming earthly gravity such beginnings lead to the road of aviation as well as cosmonautic design for future pilots and designers.

I remember my youthful years. There were a lot of glider enthusiasts everywhere. All kinds of glider designs were invented. What sacrifices their inventors made to build this motor-less plane, to rise in it up to the sky.

In fact, almost all eminent Soviet designers--S. Korol'ov, S. Il'yushyn, O. Yakovlyev, M. Tykhonravov and others went through the glider school before taking up the creation of perfect cosmic and aviation apparatus.

Young people today are enthusiastic about hang gliders. Again we are seeing a variety of design solutions. In view of the growing hang glider popularity, our bureau (where there are many avid followers of this sport) created, in my opinion, an interesting, promising and equally important inexpensive hang glider design which will soon be produced serially. I hope this will promote a further growth in the number of hang glider enthusiasts.

I want to stress, however, that the hang glider work was done on "community principles," during time free from work. Working hours (and sometimes after work hours) were devoted to carrying out a full and intense production program."

"A few weeks ago your collective was greeted with the thirty millionth passenger on the AN-24 plane. A little earlier the 30th anniversary of AN-2 service was observed and the 10th of "Antey." What kind of new machines has your design bureau prepared in recent times? What makes them interesting?"

"Do you remember the lines in Comrade L. I. Brezhnev's book "Tselina" [Virgin Soil] about a hard-working plane "Anton"--an AN-2 plane? Mentioning the irreplaceability of this "air cabby" in virgin soil conditions, Leonid Il'ich also writes that during prolonged and frequent flights it certainly wears out its passengers. And so we set ourselves a task--to create a plane which would replace AN-2, would be more comfortable, promising, faster but would still be able to land at the same airports as the "Antons."

This type of plane was created. It is the AN-28. During trial flights (until today there have been more than 1,700) this machine was highly rated by experts. Considering all possible hazards during take-off and landing, a 600-meter grass airport is quite sufficient for it. It needs a 190-meter runway and for landing even less, just 180 meters. In the air the AN builds up speed to 350 kilometers per hour, takes aboard 17 passengers or various freight for a total weight of up to 2 tons. This small plane is very comfortable, on the level of better world designs.

One more item from our bureau--the AN-72 plane. In our day new settlements appear like mushrooms after rain. They generally grow in areas far from accessible roads, in difficult to reach rayons. The helicopter is a convenient means of keeping in contact with these settlements. It is convenient but comparatively expensive. Our AN-72 was planned for flights to such areas. It needs a minimal airfield for take-off and landing even when the field is grass covered. For the first time in our country the engines of this machine are used for increasing the wing lifting power. AN-72 can carry up to a 7-ton load. It is especially useful for flights to settlements situated high in the mountains.

In addition to this work in the Tenth Five-Year Plan our collective carried out the reconstruction of the well-known AN-26, creating on its foundations a turbo-propeller machine for soil airfields--the AN-32 and its low noise level variant. In this case the reconstruction was an exchange of the old carrier for a new, much more powerful one. This is a very convenient method: without unusual expenses, utilizing the tested design, we achieved a substantial, almost a one and a half increase in the plane's productivity.

I want to stress that prior to undertaking any new work we analyze all information connected with it in detail and thoroughly, looking for the best ways to solve the set tasks. In our inquiries, of course, we cannot disregard the requirements that time places upon plane construction, and also the directions of further aviation technology development."

"Would it be possible for you, Oleh Kostyantynovych, to name the chief requirements and directions? How do they manifest themselves in the creativity of current aviation design collectives and especially yours?"

"Technology and science development today has an almost explosive character. Of course, this applies to any branch of human activity including aviation. In the post-war years we witnessed notable achievements by aviation technology creators. Plane speed, load lifting capability, comfort and flight safety increased sharply.

Yet, in recent times a tendency to slow down the pursuit of speed may be observed. This may be explained, first of all, by thoughts of a strictly economic character. In civil aviation we have reached a level of speed when even an insignificant increase turns to great material and work expenditures. In other words, this pursuit becomes unprofitable and completely unjustified.

Does that mean that aviation designers will have no serious work? Of course not. They are faced with a complex task of designing machines superior to those we have now: utilizing less fuel, providing a decrease in transport net cost, requiring moderate length airfields, creating less noise during take-off and landing and, of course, promising, safe and comfortable flights.

One of the chief requirements today is fuel economy. A tendency towards speed decrease may be observed even on main line airplanes since that is a realistic road to oil product economy in which the deficit is becoming more noticeable each year. Economy tasks also dictate a search for new composition materials by aviation designers, lighter and at the same time stronger.

An increase in flight safety and passenger comfort are very responsible tasks in design planning. The achievements in this area are obvious. Here is an example: among contemporary transport means aviation, according to statistics, is much safer than automobile, sea or railroad transport. Of course, flight safety will increase even more in the future.

It would be very desirable to direct the course of aviation design towards a decrease of plane noise which would allow a closer airport location to large city centers. We conducted an experiment once: one of our colleagues flew to Moscow from the "Zhulyany" Kiev airport on an AN-24, another from Boryspole on one of the most recent speed liners TU-154. They left the design bureau at the same time. Of course, the first passenger spent quite a bit more time in the air than the second. However, he won in time on the trip to "Zhulyany." This happens very frequently. The trip to airports sometimes takes up quite a bit more time than flights on board the airliner. In this regard the "Zhulyany" airport is an excellent example of noticeable time economy for air passengers. The chief task here is to lower the noise level. In recent years the areas in which plane noise can bother city residents has been decreased by tens of times. I am convinced that in the near future we will see planes whose noise will not be noticed by city residents.

Aviation is a child of our 20th century. Having appeared at dawn, it walks confidently in step with our fast flowing time. The progress of science and technology is raising it to ever greater heights. Aviation itself does not remain in debt: it is serving man's progress faithfully.

O. K. Antonov surrounded by his co-workers at the bureau (left to right) D. S. Kiva, V. P. Pustovoytov, O. K. Antonov, L. P. Koval's'kyy and B. O. Stryhun.

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AIR

YAK-42 BEGINS REGULAR PASSENGER SERVICE

Moscow VOZDUSHNYY TRANSPORT in Russian 23 Dec 80 p 1

[Article by V. Torishniy, Bykovo]

[Text] Flight 1135 is the number given to the daily Moscow--Krasnodar flight, which yesterday the new Yak-42 airliner began to make on a regular basis.

The strangeness began even at the Aeroflot ticket agent's window.

"From Bykovo?" the passengers asked in surprise, "Aren't you confused?"

The ticket agent had not made a mistake: the usual airport for flights to Krasnodar, Vnukovo, has passed the baton, so to speak, to Bykovo.

"Regular passenger service with Yak-42 aircraft," said I. Khokhlov, chief of the Central Regions Civil Aviation Administration, "was a qualitative step forward for the Bykovo aviation enterprise. The new plane, which successfully passed its operating tests in a short time at Bykovo, makes it possible to considerably expand the airport's capability. It has 120 seats, the cabin is comfortable, it has improved air navigation equipment--all of this will unquestionably help to make the new airplane popular with Aeroflot passengers...."

Bykovo personnel have had quite a bit to do for future Yak-42 passengers. Reconstruction of the runway, preparation of the flight equipment facility. There is probably no service at the enterprise which has not taken part in preparing for the new airliner.

The passenger, of course, is more familiar with the passenger service department than the other services. After all, he is met by its representatives in the air terminal, and it is they who check in passengers and luggage. Here again was something "unusual." Instead of the customary conveyor on which heavy suitcases are placed there was a ramp on which there were blue containers marked "Yak-42." On the average 35 suitcases fit into each of these 8 "flying bins." The passenger can watch his luggage disappear into the bowels of the container and then see the blue container go on a cart to the lift truck and take its proper place after being lifted to the loading hatch of the aircraft.

"The first commercial flight," said L. Filatov, captain of the Yak-42, "we consider to be a tribute to the 26th CPSU Congress. Regular flights with the new aircraft will be a worthy contribution to performance of the task which our industry faces in the 11th Five-Year Plan--to increase passenger traffic 1.3-fold...."

Before the first operational flight of the Yak-42 began, a meeting and press conference were held in the Bykovo aviation enterprise, in which the participants included I. Mashkivskiy, deputy minister of civil aviation, S. Yakovlev, deputy general designer, V. Agapov, first secretary of the Ramenskoye City Party Committee, and I. Khokhlov, chief of the Central Regions Civil Aviation Administration.

7045
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AIR

'SERIOUS DISRUPTIONS' IN DOMODEDOVO'S FLIGHT SCHEDULE NOTED

Moscow VOZDUSHNYY TRANSPORT in Russian 15 Nov 80 p 2

[Article by A. Lavrent'yev, Domodedovo]

[Text] Before setting off for the Ninth Report and Election Party Conference of Domodedovo Pilots, I stopped by the airport and examined the book of complaints and suggestions. Its little pages covered with hasty lines in different hands still preserved an undertone of emotional heat. During the first 9 months of this year the personnel of Domodedovo airport received more than 200 complaints and reproaches, the great majority of them in August and September. These months are memorable for many people, leaving an imprint of situations involving delays.

In the report delivered by V. Staroverov, secretary of the association's party committee, it was noted that over a period of 4 years and 9 months the passenger volume rose 44 percent and the mail and cargo traffic 10 percent. Over that time more than 25 million passengers and 354,000 tons of mail and cargo had departed from the airport.

But the latter half of this year has had an adverse impact on all performance indicators. And the reasons for this, it was stated in the report, did not lie solely in objective circumstances such as bad weather conditions, but also lay in the fact that a persistent effort to raise production efficiency and the quality of performance had not been made in all services and subdivisions as yet.

The period of maximum load--the peak of the passenger flow--proved to be very difficult for the head production association which handles 15 percent of all the traffic in the industry.

In the report delivered by the secretary of the party committee and in the statements made by the delegates to the conference an analysis was made of situations involving delays, and the causes of their occurrence were traced back to the association's subdivisions and services.

It is notable that the principal services, that is, the flight subdivisions and the aviation equipment facility, were involved in less than half of the flight delays. The delays, for which the personnel of the association were responsible in one case out of every three, occurred mainly through the fault of the sections of the production scheduling service and the traffic service. Serious criticism was addressed at the conference to V. Bugayev, I. Koval'chuk, N. Zhirikov and A. Yatsenko, supervisors and members of the party, for not being exacting enough toward their subordinates and for having been slack in inculcating in them the discipline to carry out orders.

The regularity of flights at Domodedovo was seriously disrupted in the third quarter of this year. On some occasions a single delay would grow like a snowball to take on formidable dimensions as other delays were caused. On the days of peak traffic the information service could not cope with its tasks: at times the information was contradictory and incomprehensible. Of course, one cannot leave out of the calculations the tardy arrival of aircraft from other airports. But regularity dropped 6 percent even in its own aircraft engine pool.

It must be said that the association's party committee was concerned with ensuring the regularity of flights, and discussed them at emergency meetings. V. Bugayev, first deputy chief of the association, and I. Kaz'min, chief of the service for the organization of passenger and cargo traffic, were disciplined by the party. The regularity of flights at the airport was discussed at a meeting of the bureau of the Domodedovo CPSU Gorkom. Specific measures to be taken immediately and long-range measures were worked out to prevent delay situations in the future. According to V. Sakharov, deputy chief of the association, the staff which has now been set up to ensure the regularity of flights has given a good account of itself. Flowcharts were drawn up, the number of personnel was sufficient, a system was set up for monitoring and recording the preconditions for flight delays, and each of them was thoroughly analyzed. One might have said that the situation was straightening out.

But still the causes behind the conditions resulting in delays remained as before; a lack of coordination was observed rather frequently between the various services: stewards, flight meals, special monitoring, and mail and cargo traffic. To put it simply, the ground services were noticeably holding back flight crews from fulfilling production plans. And it is significant that the party stratum was extremely thin at the places where troubles were apt to occur.

The regularity of flights is a composite problem which cannot be solved by short-term efforts of individuals and subdivisions. In other words, there must be a reliable system that envisages measures for all contingencies, specialists need to be trained, and perhaps there is even a need for comprehensive drills to achieve smooth coordination in the actions of all components of the highly complex operative mechanism of a contemporary airport.

Plans call for construction of a new air terminal complex and expansion of supporting services, and new air routes are to be added. Management will have to be improved if these complicated tasks are to be performed, unused potential will have to be utilized if aviation specialists at all levels are to perform irreproachably: from the aircraft mechanic to the captain of the plane, from the attendant distributing luggage to the production crew leader.

V. Kuveneva and A. Maslov, responsible officials of the CPSU Central Committee, A. Rusanov, secretary of the local CPSU committee, N. Bunalov, chief of the Administration for the Political Training Effort, V. Ratkin, first secretary of the Domodedovo CPSU Gorkom, A. Gubarev, pilot-astronaut and a Hero of the Soviet Union twice over, and senior officials of the Moscow Civil Aviation Transportation Administration took part in the proceedings of the conference.

Order Issued to Party Members:

To carry on a constant effort to improve the level of customer service to passengers, to ensure steady operation of the airport in the 1980-1981 fall and winter season.

To step up work to reduce personnel turnover, to that end voluntary personnel divisions and councils of young specialists are to be invigorated. To take steps to improve the living conditions and leisure of the association's aviation personnel and conditions for organized athletics and correspondence studies in higher and secondary educational institutions.

To organize voluntary protection of socialist obligations for 1981 in all collectives.

7045
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AIR

BRIEFS

AIRPORT CONSTRUCTION--Regular aircraft traffic has opened from the new Krasnoyarsk Municipal Airport. This is the first unit of the airport. It was put into operation one year ahead of the planned deadline. The completely new airport located 50 kilometers from the city will become operational during the 11th Five-Year Plan. It will have two times greater traffic capacity than the previous airport and its technical equipment will permit operation of modern IL-62, IL-86 and other aircraft here. [Text] [Moscow TRUD in Russian 31 Dec 80 p 4] 6521

CZECHOSLOVAK AIRCRAFT--Petropavlovsk-Kamchatskiy, 5 Dec 80--The new Czechoslovak L-410 UVP aircraft has given a good account of itself on the airline between the oblast city of Petropavlovsk and the rayon center of Mil'kovo. Aeroflot specialists became acquainted 10 years ago with the aviation technology of Czechoslovakia when Superaero and later L-200 (Morava) aircraft began to come to our country. The new version of the short takeoff and landing aircraft was developed especially for the Soviet Union. And now the first lot of these aircraft has arrived at Kamchatka where it will service the local lines with short flying range. [Text][Moscow PRAVDA in Russian 6 Dec 80 p 6] 6521

SCHEDULED AIR SERVICE--The IL-76 cargo aircraft yesterday made the first scheduled flight on the Irkutsk-Polyarnyy route. The crew of honored pilot of the USSR Valentin Sviridov commanded it. The aircraft carried 30 tons of assembled steel sections for new construction projects of the diamond-producing industry of Yakutiya.[Text] [Moscow TRUD in Russian 20 Dec 80 p 1]. Irkutsk, 20 Dec 80--An IL-76 was dispatched on its first operational flight from Irkutsk Airport. The crew headed by meritorious pilot of the USSR V. Sviridov delivered tens of tons of assembled steel sections for miners to the village of Polyarnyy, the northernmost village of Mirninskiy Rayon, Yakutskaya ASSR. "The jet cargo aircraft will replace the AN-12 on this route," relates civil aviation veteran, air traffic controller I. Dyuburg. "The IL-76 carries twice as much cargo and delivers it to Polyarnyy 1.5 times faster than the AN-12." [Text] [Moscow IZVESTIYA in Russian 21 Dec 80 p 6] 6521

PASSENGER SERVICE--The IL-62M passenger airliner, the flagship of Aeroflot, landed yesterday at Magadan Airport. This was an engineering flight for the aircraft which precedes the beginning of regular passenger flights. Such long-range routes as Moscow-Noril'sk-Pevek, Petropavlovsk-Kamchatskiy—Novosibirsk-Mineral'nyye Vody and Khabarovsk-Irkutsk-Rostov-na-Donu were already opened during the 10th Five-Year Plan. IL-62 and TU-154 aircraft have linked Petropavlovsk-Kamchatskiy with Simferopol' and Khabarovsk with Kiev and the residents of Yakutsk, Chita and Noril'sk have achieved direct contact with Mineral'nyye Vody. And a new aircraft is now emerging on yet another route--it was previously serviced by IL-18s. As reported to us at the Central Air Traffic Control Service of Aeroflot, the IL-62M, commanded by the crew headed by flight commander K. Churakov, flew from Moscow to Magadan in seven hours. The IL-18 required twice as much time. The new airliner makes the air route shorter--protected by its technical arsenal against atmospheric disturbances, it is more reliable than the IL-18 and made it possible to shorten the route by almost 1,000 kilometers. It will now pass over Vologda, Nar'yan-Marom, Amderma, Khatanga, Verkhoyansk and Oymyakon. The route is shorter and the locales are known to the pilots and this means the flight becomes more reliable. The flight of the IL-62M was preceded by extensive work on reconstruction of Magadan Airport--the new runway equipped with modern navigation aids became operational here. New runways capable of receiving multiplace aircraft are now being constructed at Krasnoyarsk, Khabarovsk, Vladivostok, Yuzhno-Sakhalinsk and other cities. [Text] [Moscow TRUD in Russian 14 Dec 80 p 1] 6521

YAK-42 AIRCRAFT--The new YAK-42 jet aircraft left on its first scheduled flight with passengers onboard yesterday from Moscow to Krasnodar. This nonstop flight from the capital airport of Bykovo to Krasnodar can now be completed in two-plus hours by this scheduled flight (number 1135). There is a daily takeoff at 1210. The high-speed IL-62 passenger liner took off from Domodedovo Airport to Magadan on the same day. It will cover the distance between the two cities in less than eight flying hours (the time en route was previously almost 14 hours). The flight is direct, nonstop and daily. Departure from Moscow is 1430. [Text] [Moscow MOSKOVSKAYA PRAVDA in Russian 23 Dec 80 p 3]. A new aircraft of Aeroflot, the YAK-42 with number 42313 yesterday made its first regular flight from the suburban Moscow airport of Bykovo. The crew of the aircraft headed by pilot first class L. I. Filatov delivered 90 passengers to Krasnodar within 2 hours 90 minutes, having covered a distance of 1,400 kilomters. The aircraft, developed in the collective of the well-known aircraft designer A. S. Yakovlev, is equipped with modern pilot-navigational aids. [Text] [Moscow PRAVDA in Russian 23 Dec 80 p 6] 6521

NEW PASSENGER SERVICE--Ulan-Ude, 17 Nov 80--A TU-154 aircraft made the first passenger flight from the capital of Buryatiya to Moscow. Among the first passengers were deputies of the RSFSR Supreme Soviet heading toward a meeting and leading builders of BAM [Baikal-Amur Mainline Railroad]. The comfortable jet liner is a replacement for the IL-18 aircraft. [Text] [Moscow PRAVDA in Russian 18 Nov 80 p 6] 6521

PASSENGER, CARGO SERVICE--Occupational training of pilots will permit the beginning of retraining for TU-134 or YAK-42 aircraft during the first year of the 11th Five-Year Plan. Without increasing the staff of the subdivision, seven crews or more can be trained so as to begin hauling passengers on the new class of aircraft in April of 1982. Development of Ul'yanovsk and the oblast persistently requires a sharp increase of shipments of national economic goods, mail and passengers by air transport. But the aircraft fleet of the aviation enterprise is not providing the growing demand. A positive solution of the problem on the use of TU-134 or YAK-42 aircraft by the Ul'yanovsk enterprise would permit more effective and high-quality shipments of passengers during the 11th Five-Year Plan. [Excerpt] [Moscow VOZDUSHNYY TRANSPORT in Russian 10 Feb 81 p 2] 6521

MOTOR VEHICLE

SHORTAGE OF ROAD-BUILDING MATERIALS IN RSFSR

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 5 Dec 80 p 2

[Article by Yevg. Bushin, deputy department chief of the RSFSR Ministry of Motor Roads: "The Worth of a Small Deposit"]

[Text] Shortages of crushed stone, gravel or sand frequently disrupt the work rhythm of enterprises of the building industry and cause stoppages of teams at projects. Yet at the same time, in the RSFSR, for example, the absolute majority of oblasts, krays and autonomous republics possess explored deposits of rock materials. That is why the task of continuing to develop the non-ore building materials industry set forth in the draft Basic Guidelines is both timely and feasible. I would like to contribute to the discussion of this problem by voicing my view on one reserve which, I feel, is apparently often overlooked.

An analysis of land surveys of explored deposits published by the RSFSR Ministry of Geology shows that 70 percent of the subterranean deposits have limited reserves of non-ore building materials: 10 million to 12 million cubic meters each. According to existing notions, construction of extraction enterprises is unprofitable.

But is that really so? The RSFSR Ministry of Motor Roads, which had to use half a billion cubic meters of rock materials, mostly of its own production, in the 10th Five-Year Plan period, objects to such an assessment. In the European part of the republic, where a vast program of road construction has to be carried out in the non-Chernozem region, there are by now virtually no unused major concentrations. The only alternative is thus either to go only for large deposits and accept long haulages of non-ore materials, or try to utilize local reserves, even if they are small.

If one counts only production costs, the advantages of a big extracting enterprise at a large deposit are, of course, obvious. But our ministry is both a producer and consumer. That is why, unlike the "pure" building materials industry, which sells its products to contracting ministries, we cannot restrict outselves to the intermediate result in assessing cost and effect. We must take into account the cost of haulage to the place of consumption. In road surfacing non-ore materials account for 70 to 90 percent of the total amount of materials used, so that the costs are high even with a functioning supply system. When one takes into account the need to build additional railroad spurs and the almost inevitable losses due to stoppages caused by shortages of railroad cars, one can imagine the contribution of material haulage to the per-kilometer cost of highway construction.

But why not try to rationally balance the utilization of large and small deposits so as to cut haulage down to 100 kilometers or less, which can be handled by trucks? Estimates were initially made for a restricted area, the Non-Chernozem zone of the RSFSR. They showed that the game is worth the candle. This is confirmed by results obtained in the region.

There are currently 19 enterprises in the Non-Chernozem zone working those small deposits (with reserves of less than 12 million tons) which are supposed to be nonprofitable. These small quarries supplied our builders with approximately one-quarter of the gravel and crushed rock required in the 10th Five-Year Plan period. Close haulage has been one of the decisive contributions towards fulfillment of the five-year program of road construction in the Non-Chernozem zone in four years. Finally, regarding real, not imaginary, profitability: the ultimate savings per cubic meter of rock materials in Smolensk Oblast, for example, ranged from 30 kopeks to two rubles, to say nothing of the hundreds of railway trains which did not have to be used.

You see that this is to the advantage of both the road-building ministry and the national economy as a whole. We intend to continue to exploit this reserve in the 11th Five-Year Plan period. Our branch institute, GiprodorNII [State Scientific Research Institute for Motor Road Design], has drawn up recommendations on the utilization of small deposits in all oblasts of the European part of the RSFSR that provide for optimal balancing of small-capacity quarries and enterprises (200,000 to 400,000 cubic meters of materials per year) with medium and large ones.

Everything would be fine if not for the fact that our actions are in complete violation of existing regulations. There exist officially approved rules for computing the effectiveness of a prospective enterprise. They stipulate that, with an annual output of not less than 700,000 cubic meters of rock materials, the reserves should assure operation for quarter of a century. If this requirement is not met the project does not meet the norms of technological design. Hence, no design institute can undertake to draw up the blueprints, banking authorities refuse permission to finance the project, and from the outset it lands in a dead end. The proof set forth here that the rules of technical and economic substantiation have to be changed to take into account the effect derived from reducing haulage and construction and development time has never been challanged. Apparently our estimates are trusted. But trust does not yet mean permission to build.

This state of affairs will continue until the Union Gosplan and Gosstroy, together with other concerned departments, legalize the operation of small deposits. Such a decision must, naturally, be accompanied by the elaboration of standard project designs. To place small enterprises on a sound financial footing our ministry must be authorized to set wholesale prices for their produce on its own. (The state will lose nothing since in this case all sales and purchases take place within the same branch and all that is involved is a simple internal redistribution of monies). Certain other steps are also required. However, we regard them as details of the chief and main objective of giving the "green light" to the reserves discovered in the 10th Five-Year Plan period.

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MOTOR VEHICLE

NEW ROADS TO BE BUILT TO WEST-SIBERIAN OILFIELDS

Moscow SOVETSKAYA ROSSIYA in Russian 23 Dec 80 p 1

[Article by TASS correspondent (Tyumen): "Roads--Key to Riches"]

[Text] "To ensure the further development of the major territorial-industrial complex in the northwest of Siberia."

Tyumen' oil workers began the development of a new group of deposits with the construction of motor roads, rejecting the usual but expensive delivery of equipment by air. Detachments of several of the country's road-building organizations have disembarked in the subpolar forest-tundra.

Roads in Tyumen' Oblast have to cross swamps and forests. Much work went into the accumulation of construction experience in such conditions. Especially many effective innovations appeared in the course of the 10th Five-Year Plan period. They include building roads on frozen foundations, using hydraulic excavators to build roadbeds, replacing expensive timber with nonwoven synthetic materials for local roads.

All this has made it possible to cut costs. Today construction of one kilometer of motor road costs half as much as formerly.

The new group of Tyumen' deposits is located in the Arctic tundra. Building a road there is a titantic job. Hundreds of thousands of cubic meters of earth and thousands of cubic meters of reinforced concrete will go into it. And yet, it is much cheaper than developing deposits with the help of aviation.

Sixteen new construction and maintenance administrations and a bridge building trust have been additionally set up to help solve the vast problem of road construction. Road organizations from other fraternal republics of the country have come to the help of the Tyumen' builders. They have brought in machines and building materials needed to build worker settlements and industrial and maintenance bases. They are also contributing road building materials.

Next year 600 kilometers of motor roads will be built in the northern Tyumen' Oblast, three times more than were formerly built in the same time. The roads will provide reliable access to promising new oilfields and link them with cities and townships.

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TENTH KAMAZ PLANT UNDER CONSTRUCTION

Moscow TRUD in Russian 6 Jan 81 p 1

[Article by Ye. Ukhov, TRUD correspondent (Naberezhnyye Chelny): "The Tenth KamAZ Plant"]

> [Text] A new specialized plant for repairing motor vehicle engines is being built in Naberezhnyye Chelny. It will be the tenth KamAZ plant.

The builders are still at work in the new enterprise's main building, but the high rate of KamAZ output has forced the factory workers to start operating the new facility. Without waiting for the main areas to be completed, they have begun conveyer repairs of diesel engines in the still uncommissioned building. Repair mechanics R. Gilyazov, A. Gudkin and A. Zhulenok are successfully mastering the dismantling and assembly conveyers and the test station.

"Restoration of sophisticated KamAZ engines by primitive methods in garages and motor repair shops is expensive and inefficient," says A. Malyshev, deputy general director of KamAZ. "Factory repairs guarantee longer vehicle service. The post-repairs reserve of an engine overhauled at a specialized enterprise is twice as great as one repaired in local conditions. Because of this, when the plant goes into full operation the economic effect will be equivalent to the manufacture of 40,000 new vehicles. In future, when the KamAZ fleet will reach 1.5 million units, there will be a need for at least five plants with a capacity of 50,000 overhauls in different parts of the country."

Overhauling a KamAZ engine requires special diagnostic equipment, hydraulic and pneumatic tools. Motor vehicle depots still lack such things. Restoration of units and assemblies without special fixtures and materials considerably increases labor input. Overhauling on an industrial basis will make work much easier and transfer laborious manual operations to machines.

The new plant, according to its director, I. Grechukha, will be housed in a building covering 15 hectares. Fifteen hundred units of sophisticated equipment will be installed, including 16 automatic lines. The most up-to-date methods, such as electroplating and plasma spraying, will be employed for the restoration of basic parts. The use of modern restoration and strengthening methods on such a scale will make it possible to reduce use of new parts by two-thirds.

For the first time in the history of Soviet truck-building, the KamAZ works will undertake complete maintenance of its products even after delivery to the customer. Supplying spare parts and units and creating a turnover stock of engines through a network of company service centers will considerably reduce losses of motor transport enterprises due to non-operation of vehicles during repairs.

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MOTOR VEHICLE

AUTO REPAIR COMPLEX

Moscow SOVETSKIY VOIN in Russian No 1, Jan 81 p 32, signed to press 15 Dec 80

[Article: "Automobile Repair Complex"]

[Text] Repairing an automobile is not all that difficult. But how is it done faster, better, with the most efficient use of labor? Specialists of the No 1 Automobile Depot in Novosibirsk have elaborated and built a KamAZ truck maintenance and repair facility capable of handling more than 3,000 vehicles a year. The complex, housed in a two-story building, occupies an area of 1,600 square meters and comprises nine specialized stations equipped with 20 multipurpose assemblies for various repair jobs and units for servicing the workplaces. The multipurpose assemblies are installed on the first floor, the trucks to be serviced are on the second. All operations for servicing, for example the steering gear or suspension, jacking up the truck, and so on, are performed easily and quickly with the help of mechanisms.

Use of the complex with the introduction of a centralized system for controlling the production, repairs and maintenance of motor vehicles helps raise labor productivity by 30 percent.

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MOTOR VEHICLE

BRIEFS

DIESEL TESTING--Yet another testing station has become operational at the Yaroslavl' Motor Plant. Its planned productivity is 6,000 engines annually. Motors of a new family, the YaMZ-840, development of which and organization of serial production are provided by the plans of the enterprise, will be tested here. The first engines of this family underwent a check recently at the new testing station. They will be installed on 40-ton quarry dump trucks of mark BelavtoMAZ. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 27 Nov 80 p 2] 6521

KAMAZ PRODUCTION--The first vehicles came off the main conveyor of KamAZ [Kama Automotive Plant] during the first few days of February in 1976. The automotive plant workers from the banks of the Kama River marked the opening of the 25th CPSU Congress with this success. And now the collective of the association is close to producing its 200,000th truck. The second unit of the main conveyor began to operate here a few days ago. The enterprise now manufactures 242 vehicles per day. Besides the well-known marks, they include new large-capacity stake-bed trucks with removable bodies and truck tractors of increased load capacity, output of which was recently organized. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 27 Nov 80 p 2] 6521

ZHIGULI PRODUCTION--Tol'yatti--The first automobiles of the new model of the VAZ-2107 have been assembled at the Volga Automotive Plant. Constant innovation of production has become a principle for VAZ. Capacities to produce 50,000 Niv vehicles were introduced here during the 10th Five-Year Plan and they were assimilated eight months earlier than the planned deadline. Production of a new model of the Zhiguli--the VAZ-2105--will begin here in 1980. The automotive plant workers have decided to assimilate no less than 80 percent of capacity for VAZ-2105 production by the opening day of the 26th Party Congress. [Text] [Moscow TRUD in Russian 31 Dec 80 p 4] 6521

ENGINE PROTECTION--The Odessa Linoleum Plant Bol'shevik has organized production of parts for automobile engines from materials resistant to corrosion caused by microorganisms. Small additives of antiseptics--sodium fluoride and other substances which are introduced for vulcanization--prevent the destructive action of microorganisms. Therefore, the new combination rubber-cork gaskets have a much longer service life than ordinary gaskets. They do not lose their strength even under conditions of a wet or hot tropical climate. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 11 Nov 80 p 2] 6521

AUTOMOBILE TRAILERS--The transport facilities of the firstborn of Belorussian automobile construction will soon be supplemented with yet another technical innovation--the MAZ-8111 cargo trailer, but for a compact automobile. The designation of the new trailer is to haul small loads weighing up to 160 kilograms and also the baggage of automobile tourists. The main towing automobiles for it are the Moskvich-412 and Moskvich-2140, with which the trailer has an identical wheel-hub group, and also a number of parts and suspension assemblies. At the same time the MAZ-8111 can be operated successfully with any compact automobile, the manufacturing plant of which permits towing of a trailer. All the planned experimental-design work on the new article has now been completed. Plant and acceptance trials of the trailer carried out during this indicated its reliability, durability, maneuverability and a number of other qualities due to which it can compete successfully both with domestic and foreign counterparts. [Excerpt] [Minsk SOVETSKAYA BELORUSSIYA in Russian 3 Dec 80 p 2] 6521

HIGHWAY CONSTRUCTION--Kazan', 25 Oct 80--A joyful event occurred on the 93rd kilometer of the Kazan'-Naberezhnyye Chelny Expressway under construction. Two sections of the main line, which were laid to meet each other, were connected here. Road builders of two administrations of the Kazandorstroy Trust, who are building the main line from Kazan' and Naberezhnyye Chelny, met. Construction of the 220 kilometer asphalt-concrete route, which links Kazan' to the automotive giant on the Kama River, has been completed. [Text] [Moscow PRAVDA in Russian 26 Oct 80 p 3] 6521

KAMAZ TRUCK PRODUCTION--Naberezhnyye Chelny, Tatarskaya ASSR--The Kama Association of Truck Production has begun to produce vehicles for the countryside. A lot of KamAZ-55102 trucks came off the second unit of the main conveyor. The new dump truck with capacity of seven tons is the sixth modification in the family of KamAZ trucks. It is designed especially for use in agriculture. The body, which tips in three directions, was developed by designers of the enterprise and the truck can also operate as a truck-train with dumping trailer. The first vehicles of the new modification were sent to the Neftekamsk Dump Truck Plant, where they will be equipped with bodies. And the KamAZ [Kama Automotive Plant] collective is already working on development of the special KamAZ-4310 all-terrain truck. It is planned to produce the first lot of these trucks by the opening of the 26th CPSU Congress. [Text] [Moscow GUDOK in Russian 20 Jan 81 p 1] 6521

EXPERIMENTAL TRUCKS--Ufa--An experimental lot of trucks with increased maneuverability and trafficability has been manufactured at the Neftekamsk Dump Truck Plant in Bashkiriya. This is a KamAZ vehicle with plant serial number 55102. The new truck will be outfitted with a trailer and accessories for hauling bulk and large cargo. Output of KamAZ vehicles of the new series will increase significantly during the 11th Five-Year Plan. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 8 Jan 81 p 1] 6521

RAILROAD

PROBLEMS BETWEEN INDUSTRIAL ENTERPRISES, RAILROADS

Moscow KHOZYAYSTVO I PRAVO in Russian No 11, 1980 pp 27-31

[Article by V. Goncharenko, chief of the Transportation Administration, Ukrainian SSR Ministry of Ferrous Metallurgy: "Industry and Transportation: Problems of Interaction"]

[Text] Problems involving transportation operations, rail primarily, now are especially acute. I think I am correct in stating that, for us, workers in industrial transportation whose daily activities take place at the interchange between enterprises and railroads, these problems are replete with profound content. That is why L. I. Brezhnev's conclusion made at the November (1979) CPSU Central Committee Plenum is of such great significance: "It is necessary to work out a long-term integrated transportation development program which would absorb the best achievements in scientific and technical thought. This program must encompass the problems of the development and interaction of all types of shipments. It should focus in on modernization of the railroads, advancing rates of growth of pipeline, river, and automotive transportation, and mechanization of freight handling operations. Special attention should be devoted to fundamental improvement in shipment organization and more rational shipment planning."

Let us dwell on several, mainly organizational, capabilities, which have not as yet been used due the imperfection of the functioning economic mechanism. These capabilities, graphically speaking, lie at the interchange between two systems: railway transportation and industrial enterprises.

The indicator of the periods or of the speed of freight delivery has special significance in the problem of increasing the efficiency of public production based on improving the operation of the "industry-industrial railway transportation-mainline transportation" chain. The urgency of this will become clear if you consider that, at any given hour, approximately 50 million tons of freight worth more than R10 billion are on the move in the country. The requirement to accelerate the delivery of freight also is natural since cars spend 6 percent of total turnaround time in freight handling operations on enterprises spur tracks and the remainder on railway mainlines. Fulfillment of this requirement would make it possible to avoid the difficulties which the national economy is now forced to endure due to delay in car turnaround.

Losses of loading resources caused by the great and continually growing transportation duration, being very imposing, are not the only thing. True, those which we will discuss further cannot be directly considered the fault of railway mainlines since they are fixed and are charged to industrial enterprises. But, they are a direct result of the fact that the requisite freight delivery system is lacking in the railway network and the speed of this delivery is low.

The main share of off-loads at metallurgical by-product coke plants is ore and metallurgical raw materials and coking coal. They are unloaded at large unloading complexes, whose throughput is enormous, but not infinite. Productivity here greatly depends on the uniformity of use during the 24-hour day. Often, unit trains dispatched later arrive for unloading along with or before those which were dispatched 10-20 hours earlier, which leads only to unproductive layovers of cars awaiting unloading. These layovers, charged to the enterprises, seriously increase shipment costs, causing a requirement for additional cars, locomotives, and operating personnel.

Enormous overall unproductive car layovers can be reduced sharply if one reexamines the present system of norm setting and delivery period calculation. Apparently, we should introduce a "freight delivery speed" indicator, which combined with other measures might favorably impact upon establishment of rhythmicity in the shipment process.

The periods and speeds of delivery, of course, are differentiated and should be established primarily for consignor unit trains. They should be technically substantiated, issued by the MPS [Ministry of Railways] with five-year and annual plans, and calculated by the USSR TsSU [Central Statistical Administration].

Basic transportation traffic volumes originate and terminate in industrial transportation. The circumstance that 85-95 percent of freight handling is done on spur tracks objectively determines the primary role of industrial transportation in the organization of car traffic volume from the loading point, including consignor unit train organization.

Analysis of the figures demonstrates the developmental tendency: in 1966 unit train traffic volume in comparison to overall traffic volume was 35.5 percent, was 39.2 percent in 1970, and reached 45.5 percent in 1978. In addition, the rate of increase in the degree of unit train organization should be recognized as being unsatisfactory. Such a conclusion is important right now, when railroads are not coping with present shipment volumes and they are delaying car turnaround and section speeds. They are in bad need of help in organizing car traffic volume in connection with insufficient network development, classification yards especially. Considerable relief would be forthcoming given radical intensification of consignor unit train organization from spur tracks. Our sector's enterprises in the past 10 years increased unit train organization almost 30 percent and raised it to 54.5 percent. We know, however, that we have not reached the limit and many reserves exist, at metallurgical plants in particular. Difficulties in realizing them, as paradoxical as it might seem, depend upon the most interested party--the MPS. This occurs because an increase in unit train organization from the unloading point absolutely requires an increase in the time the consignor needs to accumulate the unit trains. Unit train size is directly proportionate to the quantity and amount of accumulated equipment. The time the consignor loses is compensated for with interest by the savings in car-hours generated at classification yards and by elimination of car layovers awaiting accumulation and of other costs of processing the car traffic volume overall. These savings are settled in mainline transportation and the latter does not care to share even a portion of these savings with those who bear direct losses in the form of fines for supposed unproductive car layover.

Foreign practice demonstrates the great interest railroads have for unit train organization of car traffic volume from freight shippers and their approach to the problem. Unfortunately, neither foreign know-how nor technical calculations can shake the convictions of those in the MPS that set the policy in this area.

Whether consignor unit train organization helps transportation and the national economy or remains a potential capability completely and fully depends on the MPS. It still is the MPS that has the right to be "arbiter of fashion" in problems that are serious and, in essence, intersectorial.

Legal, financial, technical and other relations among railroads and national economic enterprises are structured on agreements made based upon Individual Technological Processes (ETP) for station and spur track operations. The key documents here are the MPS Instructions on Development of Individual Technological Processes for the Operations of Railroad Spur Tracks and Interchange Stations and the Rules for Railroad Spur Track Operations, approved by the MPS. Due to obvious imperfection, both documents back in 1969 were sent to the State Experts Commission in USSR Gosplan. Based on the examination by the experts, a decision was made which obliged the MPS to develop and implement proposals which refine extant normative statutes and instructions on spur track operation and, in addition, directed towards improving the joint work of mainline and industrial transportation.

Why were the extant statutes unusable? The most general response to that question is the necessity to raise national economic efficiency in the "industry-industrial railway transportation-mainline transportation" system. Extant time norms for loading and unloading cars, as a rule, lack profound technical and economic substantiation and, in many cases, directly are oriented towards a radical growth in national economic costs linked with introduction of additional freight handling equipment at enterprises and arrhythmia in use of labor and equipment resources. The present procedure for development and approval of ETP envisions a system of unequal mutual relations between mainline and industrial transportation whereby development of the basic normative document is accomplished by a commission chaired by a railroad worker, often carelessly representing the main point--the production technology of the industrial enterprises.

The situation existing at the interchange between mainline and industrial railway transportation led to the fact that the majority of enterprises for decades(!) have not been fulfilling the established car layover norms and annually pay the multimillion ruble fines associated therewith, eliminating them from profit with all the consequences that accrue thereto. Even large collectives (2,000-4,000 persons) of railway transportation workers at industrial enterprises in actuality lose the right to participate in socialist competition since the evaluation of their labor is done primarily based upon the indicator of MPS car use. These causes lead to the fact that industrial transportation operating costs rise unjustifiably and indicators of the effectiveness of capital investments in labor productivity decrease.

More than 10 years have passed since the question of the need to straighten out the mutual relationships between mainline transportation and the industrial transportation of national economic enterprises was posed. The duration of this period only underscores how tightly the MPS controls the rules and instructions it independently generates and which protect its departmental interests! "Carrying out" the decisions made, the MPS already repeatedly presents drafts of supposedly new documents for regulation of its relations with enterprises. Upon inspection it turns out that they differ hardly at all from extant regulations, meaning that they again go back to be reworked. And, time passes, taking away the unfulfilled capabilities the State Experts Commission noted for further improvement in mainline and industrial railway transportation operations!

There is a need to change the very approach to the problem in order to open a path for real coordination as a basis, a reliable foundation, for radical improvement in the entire "industry-industrial railway transportation-mainline transportation" system. The extant system of preferential layover with fines for excess layover is more than 50 years old and has outlived its usefulness. It has become a complete contradiction to the conditions of coordination dictated by the scientific and technical revolution, by the level of enterprise development, and by the development of the transportation serving these enterprises.

It is inconceivable why an economic mechanism structured in categories of cost, prices, profit, profitability, and production cost and regulating relations among all elements of our socialist economy, as MPS workers affirm, in principle is unacceptable for such mutual relations between enterprises and railway transportation.

Coordination based on economic interests should create conditions under which an enterprise would be interested in:

--keeping a car in freight handling and transportation operations for an optimal time and continually seeking new ways to achieve this goal as being economically advantageous;

--dispatching and receiving freight in a unit train or in a large group of cars.

Finding a way to such a solution to the problem means insuring intensive and rational use not only of mainline cars, but also of the enterprise equipment involved in processing them.

On the other hand, there is a need to insure the economic interest of railroads in the fastest possible and regulated delivery of freight to consumers.

The point is to see that the appropriate economic mechanism is created, tested, and implemented.

Since production cost is the objective and most generalized indicator of all the costs per unit of manufactured product, it is natural and quite necessary that expenditures linked with transportation and freight operations, which support the process of production and distribution, are reflected in this indicator. The conclusion arises: the enterprise must pay for the use of the state (mainline) car in a manner similar to how it pays for everything provided to it from outside to accomplish the processes of production and sale of the product.

Since production cost of a product is an indicator subject to systematic reduction, it is also natural that there is a need for constant reduction in its components, one being the proposed payment for car use. Reduction in the size of this payment will become possible only given a systematic reduction in expenditure of car-hours per unit of manufactured product.

Realization of the proposed foundation for mutual relations between mainline transportation and national economic enterprises for the first time will provide the opportunity to put things on a firm economic footing.

Finally, an objective opportunity arises to focus the attention of a wide circle of specialists from enterprises and from their elements, starting with the director and ending with shop personnel, on improving car use. It is sufficient to analyze the enterprise director's reasoning process, to play his role so to speak, in order to illustrate this point. His requirement is to increase production continually, insuring an increase in sales volume, labor productivity, development funds, material bonus payments, and so on. When there is a shortage of capital investments, they are directed primarily at those goals, as well as at creation of installations, which can aid in improving product quality, which insures additional payments for the wholesale price. This increases sales volumes and automatically improves the enterprise's technical and economic indicators. And, what do capital investments in transportation installations provide? Operating capital increases and consequently so do amortization deductions. Opportunities are created for accelerated processing of cars (which the enterprise gets free of charge) and the opportunity arises to cut the fines for excess car layover compared to the norm the railway workers establish. However, this last "advantage" is temporary and practically speaking not appreciable. The preferential layover system envisions renewal of the maintenance agreement every 3 years, with a systematic reduction in car layover norms depending on the amount of technical equipment the transportation complex has.

Consequently, the enterprise director, having sought and invested resources in development of the transportation and freight complex, receives a reduced car layover norm when the new agreement is made; he also receives along with this the former or even a higher level of fines. It is quite possible that this circumstance played and continues to play a great negative role, as a consequence of which an unnaturally large number of workers manually engaged in freight handling operations are retained in transportation. This circumstance impedes--and unfortunately purposefully!--the labor mechanization process and a repeated increase in its productivity, while hindering solution of a serious social problem.

The situation will change radically only given the availability of an economic lever and, based on it, an evaluation criterion which objectively reflects actual car use at a specific enterprise under the specific conditions of the technical equipment on hand at a given time, in comparison with the previous period, and with consideration for the future.

An objective economic analysis will provide the opportunity accurately to determine for what and how many resources need to be invested to achieve a specific result in car use, how effective these expenditures will be, how they will be reflected in the economic indicators, and what they will bring to the specific enterprise and to the national economy.

Development of and the need for the fastest possible implementation of the foundations for coordination between mainline and industrial railway transportation especially are evident today when losses of transportation resources and reduced efficiency at the interchange between industry and transportation have been revealed by a number of decrees of the CPSU Central Committee, which examined positive know-how in the operations of transport workers in the Leningrad Complex, of railway and enterprise workers in Chelyabinskaya Oblast, and others.

I am convinced that the serious situation now existing in railway transportation will be overcome much sooner than will the construction of secondary and tertiary tracks and new classification yards, the shortage of which are sometimes cited.

Undoubtedly, creation of a new legal economic mechanism aimed at consolidation of the individual and overall resources of the participants in the transportation process, with subordination of the interests of each to achievement of minimal adjusted transportation costs for accomplishment of shipments which satisfy the needs of the national economy quantitatively and qualitatively, will turn out to be fruitful and most economical. The main efforts of those upon whom rapid and correct solution of the problems depends must be directed towards this also.

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RAILROAD

MOSCOW RAILROAD SYSTEM'S USE OF LONGER, HEAVIER TRAINS

Moscow EKONOMICHESKAYA GAZETA in Russian No 3, Jan 81 p 7

/Article by I. Paristyy, chief of the Moscow railroad: "Railroad Transport Reserves"/

/Text/ Experience shows that the initiative of the collectives of the enterprises of the Moscow railroad to increase the weight and length of trains is a key reserve on these lines using available locomotives and railroad cars to increase shipments of cargo within the shortest time periods possible, thereby improving transport services to the national economy. This initiative was approved by the CPSU Central Committee in March 1979. This is seen as a significant reserve for successfully fulfilling the task to increase the throughput and carrying capacitites of the railroads. This task was outlined in the draft that the CPSU Central Committee will present to the 26th CPSU Congress.

During 1979 and 1980 the average annual growth rate in the average weight of a train on the Moscow railroad increased 3.5-fold. The heavier and longer trains have transported 160 million tons of cargo in excess of the norm. To handle such a freight flow using regular methods would have required the construction of a new electrified railroad line costing 50 million rubles. By increasing the weight of trains the carrying capacity of some of the busier sections is increasing by 8 to 10 percent without changing any equipment.

The use of the locomotive park and the return on capital investments for transportation facilities are improving significantly. For example, at the Moscow sorting yard locomotive depot during the past two years the average weight of a train increased by 279 tons. Because each locomotive is pulling a heavier train than before, nearly 30 locomotives are freed every 24 hours for additional shipments.

One of the most important advantages of increasing the weight and length of trains is the possibility of decreasing the number of trains for handling the same freight flow. This promotes a growth in speeds and raises the level of fulfilling the traffic schedule.

In 1980 for the first time in many years the speed of trains on the Moscow railroad increased by 2.6 percent, the level of observing the schedule rose by 5.7 percent, and worker idle time fell by 8 percent. The decrease in the relative expenditures of electric power, which occurs when the weight of a train is increased, contributed significantly to the more than 30 million kilowatt-hours of electricity conserved by the railroad during the year.

In our opinion, by increasing the weight and length of trains we can within the shortest time periods improve the production and economic activity of railroad transport.

The efficiency of organizing the movement of such trains will be higher and greater than the on-site yard in which they are used. In connection with this the question of lengthening the station tracks so that they can accomodate the heavy trains becomes particularly crucial. Short station tracks are the main impediment to raising the weight and length of trains.

Up until now the reserves of station tracks were nearly exhausted. For example, during the past 20 years on the Moscow railroad shipping volume grew by 80 percent, the weight and length of a train by 40 percent, and the relative length of station tracks increased by only 2.6 percent. Therefore, increasing the length of station tracks, and the development of stations on the whole, must be one of the main trends in the technical reequipping of transport in the Eleventh Five-Year Plan.

Obtaining additional reserves of the carrying capacity by increasing the weight and length of trains does not depend only upon the railroads. The supply and sales organizations can do their utmost to enlarge and entrain shipments, which will provide the stations with the necessary "material" for forming heavy and long trains. Unfortunately, the routing assignments in many cases are not being fulfilled; and cargoes are being shipped in single railcars.

During 1980 on the Moscow railroad the freight dispatchers disrupted 2,234 freight trains, including trains loaded with coal, oil, ore and construction materials. The Voskresenskoye Association "Mineral Fertilizer" failed to ensure the departure of 90 freight trains; and the Likhachev Automobile Plant failed to ensure the departure of 77 freight trains. This list could go on and on.

Prior to the 26th CPSU Congress it would be wise to include in the draft of the CPSU Central Committee the following paragraph: "To develop and accomplish in the Eleventh Five-Year Plan a comprehensive program for the development of stations, for lengthening and raising the capacity of station tracks to obtain addition resources of carrying capacity of the major railroad lines by significantly increasing the weight and length of trains. The supply and sales organizations are to do their utmost to enlarge and entrain deliveries and shipments."

Railroad workers are also disturbed by labor resource problems.

The labor shortage has led to the cancellation of escort brigades for freight trains. As a result control over the quality of forming trains has been weakened; and the situation with the safeguarding of cargo during shipment has gotten much worse. The institute of railroad linesmen has been almost completely eliminated; and the contingent of rail workers (track layers) has been reduced in force. Their functions are now being performed by the inspectorate for the current maintenance of track. The reduction in conductors on passenger cars hardly corresponds to the interests of the national economy.

I propose including the following point in the draft of the Basic Trends: "Improve the regulation and distribution of available labor resources to create the conditions necessary for the top priority provision of labor resources to the enterprises of the leading sectors of the national economy, especially railroad transport."

The effect of the decision of the Party and government to improve the economic mechanism still has not fully impacted on the transportation sector. A serious oversight in planning the work of railroad transport is that freight turnover and its related indicators are planned without being broken down by ministry and department - the freight dispatchers and kinds of cargo.

The indicators (income, profit and outlays) connected with freight turnover are planned without being broken down by kinds of cargo. This makes it impossible to coordinate the shipping plan with the production-financial plan. The inadequate concreteness of the shipping plan, its lack of specific destinations, and consequently, the directions for the movement of cargo and unloading stations are responsible for the periodic difficulties that arise on the railroads.

In September 1980 two small stations of the Moscow railroad, which have two or three tracks, began receiving as many as 200 railcars of pipes every 24 hours for unloading from the Southern Urals. They were able to unload 35 to 40 railcars. The stations were congested with trains and delayed the passage of trains. If the shipping plan had included the destination, it would have been possible to be ready for their arrival. It is logical that only the freight dispatchers - the supply and sales organizations - can come up with such a specific shipping plan.

It is very important that in the Eleventh Five-Year Plan a switch be made to the structured planning of freight turnover and passenger turnover by ministry and department, the most important cargoes, the shipping and receiving points, mode of transport so that on this basis a complete coordination of transport plans, production and shipping plans can be ensured. It is also very important to forecast the loading of railroad lines to avert difficulties in the delivery and unloading of cargoes.

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DEVELOPMENT OF UZBEKISTAN'S RAILROAD NETWORK

Moscow GUDOK in Russian 10 Feb 81 p 2

[Article by G. Zakhritdinov, chief of the division of transportation and communications of the Central Committee of the Communist Party of Uzbekistan: "Economics and Transportation in Uzbekistan"]

> [Text] We discuss below the draft document of the CPSU Central Committee for the 26th party congress entitled "Basic Directions of Economic and Social Development of the USSR for 1981-1985 and the Period until 1990."

The industrial potential of Uzbekistan today is determined by its large fuel-energy base, ferrous and nonferrous metallurgy, the chemical and petrochemical industries, and machine building. The sectors that foster technical progress are developing especially fast in the republic. During the 10th Five-Year Plan the country received 28.5 million tons of Uzbek cotton.

Even greater growth in the productive forces of our region is contemplated in the future. This challenge cannot be met unless there is faster development and improvement of the work of the transportation network.

The technical equipment ratio on the Central Asian Railroad has risen almost 60 percent in the last 10 years. Planning agencies, supply and marketing agencies, and ministries and departments in the republic have done a great deal to improve transportation and economic links and eliminate countershipping, shipments that are too long, and other forms of inefficient shipping. This made it possible to release more than 20,000 railroad cars for additional shipping in 1980 alone.

We intend to continue focusing attention on rationalization of shipping in the current five-year plan. To eliminate long shipments of building materials we plan to establish capacities to produce them in the Karakalpak ASSR and Khorezmskaya, Kashkadar'inskaya, and Surkhardar'inskaya oblasts. About 30 large building materials plants will be built and expanded. Enlarging the capacities of milling enterprises will help reduce the distance of flour shipments. Rational siting of oil extraction plants will enable us to cut interoblast shipments of cotton seed significantly.

I believe that, because rationalization of shipping is a major reserve for increasing the efficiency of the shipping process, the draft document of the CPSU Central Committee for the 26th party congress be supplemented with the following phrase: "Develop efficient plans of freight flows in the economic regions, republics, and the country as a whole."

The Central Committee of the Communist Party and Government of Uzbekistan are devoting a great deal of attention to the development and improvement of work by the Central Asian Railroad and to technical re-equipping of the sidings and transportation shops of enterprises. More than 200 kilometers of freight-handling areas on sidings were added during the past five-year plan, and more than 40 supply depots, warehouses, and freight yards were put into use. The enterprises received large numbers of highly productive machines and more than 40 switch engines. In addition, the capacities of many stations were built up, some 60 kilometers of station track were laid, and several stations were equipped with automatic and remote control devices at the expense of non-transportation enterprises.

Railroad cars are being used better. The damage rate to the cars has been reduced and the proportion of manual labor in freight-handling operations has been lowered. In 1980 alone car downtime at enterprise sidings was cut by 30 minutes. This made it possible to free more than 40,000 cars for additional loading.

Unfortunately, the development of transportation and storage facilities at many enterprises still lags behind primary production. Additional production capacities are often launched following the construction of new and reconstruction of existing enterprises without appropriate development of transportation facilities.

The Bekabad Metallurgical Plant of the USSR Ministry of Ferrous Metallurgy is an example. The freight traffic there tripled after the plant was reconstructed, but development of the railroad stations was not begun until last year and will not be completed until more than three years after the primary capacities were launched. The situation is similar at the Almalyk Chemical Plant of the USSR Ministry of Chemical Industry. Serious transportation problems may arise because of delay in developing the stations that serve the Angren coal basin and the Angrenskaya State Regional Power Plant. According to the plan coal shipments on this segment of the railroad will more than quadruple, and of course the existing stations cannot handle this traffic without reconstruction of their facilities. The Ministry of Coal Industry should take decisive steps. A similar situation has also developed in several other areas.

It is apparent that the present procedure for the development of railroad stations in connection with the building or reconstruction of enterprises and connection of new sidings, as ratified by USSR Gosstroy in 1972, needs major modification. The system must be organized so that development of external transportation never lags behind primary production.

I think it would be useful to add the following lines to the CPSU's draft document: "Insure that the loading-unloading areas are appropriate to the capacities of primary production. For large-scale freight arrivals develop loading areas that can receive entire trains."

In view of the high rate of development of our republic's economy in the 11th Five-Year Plan, the Ministry of Railroads should devote special attention to the traffic and processing capacities of the Central Asian Railroad, building up repair facilities here, and resolving social questions.

Despite the steps that are being taken to improve the reliability of diesel locomotives, many problems still arise en route and trains must be taken off for unplanned repair work. Certainly the employees of the locomotive system and party organizations at the depots have a great deal yet to do to improve the maintenance of diesel locomotives and raise the quality of repair work on them. But we cannot overlook the fact that the diesel locomotives produced by industry today are not suited for work under the difficult climatic conditions of Central Asia. Furthermore, designers and specialists do not seem to take the necessary steps so that train crews can work normally in hot temperatures. Obviously, the ministries of Railroads and Heavy and Transport Machine Building should solve the problem, which has been facing us for some time, of designing a special modification of the diesel locomotive for work in a hot climate, with air conditioning in the engineer's compartment.

Although the volume of capital investment in the locomotive system of the railroad in the 10th Five-Year Plan more than doubled compared to the level in the Ninth Five-Year Plan, it still was not possible to eliminate the disproportion between the number of locomotives and the number of places in the depots. Therefore, we must step up the development of repair facilities.

The existing capacities of depots and areas to prepare cars for loading also fail to meet the needs of the railroad. Moreover, the fleet of cars must be developed more rapidly.

We have good cadres of workers and managers of railroad transportation in Uzbekistan. This is a guarantee that the difficult challenges posed by the party for railroad workers will be met successfully.

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RAILROAD

FINES LEVIED ON RAILROADS FOR INEFFICIENCY

Moscow KHOZYAYSTVO I PRAVO in Russian No 11, 1980 pp 31-32

[Article by Ye. Shchipurzhitskiy, chief of the legal department, Karellesprom All-Union Lumber Association: "Where are the Transportation Resources Getting Lost?"]

[Text] The enterprises in the Karellesprom All-Union Lumber Association are linked with 43 rail stations. Our product is shipped from them. And, if you analyze the car delivery register and car clearance from spur tracks, you become convinced that there really are few days when the car loading periods established by agreement are not violated, for which, understandably, the lumber sovkhozes are fined.

Naturally, railway workers, not limiting themselves to the fine, also compute the transportation resources lost due to above-norm layovers. In response to complaints about late delivery of cars called for in the approved shipment plan, they can reproach us for such losses. At first glance these reproaches seem completely valid.

And actually, the car delivery and clearance registers dispassionately denote shortcomings in enterprise use of equipment. Only they also denote with identical dispassion something else, something I would like to bring to the attention of the readers of this publication, especially railroad workers.

The time that the loaded cars clear the tracks also must be indicated in the aforementioned registers. However, this column in the register, an entry very important to the freight consignor, is left blank at a number of stations. This situation must be changed. Just last year the USSR Council of Ministers passed decree No. 380 "On an Increase in the Financial Responsibility for Use and Care of Railway Equipment." Morever there is in the Railway Regulations an article envisioning the financial responsibility of railroads for late clearance of loaded cars, when this is done by their locomotives.

Having expressed this hope, I will allow myself to return to the registers, more specifically to the "clearance" column. The fact of the matter is that this column, when filled in, can give witness to the fact that loaded cars wait from 4 to 12 hours for a locomotive. By the way, this wait, as a rule, exceeds--often by large factors--the car layover awaiting loading norm. This is exactly the case at all 43 of our stations. I might add that, visiting other associations, I observed an identical picture. Thus, the registers we are discussing make it possible to confirm that cars delayed by the freight consignor in excess of the established norms (and such delays, as is known, result in large fines) in actuality are laying over awaiting clearance. At least two questions arise in this regard. First, does a fine in this case facilitate car turnaround? Second, how fair is it to accuse freight consignors of a loss of resources which are computed on the basis of excess car layovers awaiting loading, but without consideration of their clearance by the railroad?

After publication of the aforementioned decree, the enterprises in our association suggested to the Kem' and Petrozavodsk divisions of the October Railroad that a loaded car clearance deadline be established in car delivery and clearance agreements. The railway workers did so--5-10 hours after completion of loading for different stations.

I understand that this is not only insurance against possible fines the railroad has to pay freight consignors. In essence, such a proposal boils down to legalizing, through agreements, a practice begun years ago. There is no need here to simplify the problem, or moreover to suggest that, on the October Railroad (and on others as well), transportation supervisory personnel have lost the sense of responsibility. On the contrary, their high business-like qualities and their understanding of their assigned tasking are known to us. The practice that has developed and, consequently, the suggestion made are determined mainly by actual station technical and economic capabilities. I repeat: mainly because railway workers have great reserves, the use of which significantly will accelerate the clearance of cars off spur tracks. But, these reserves for some reason are not mentioned and resources lost due to the fault of the stations are not being calculated. And that is a shame!

In my opinion, it is high time we called a spade a spade, as they say, and set things straight. If cars loaded on time and cars delayed above the norm awaiting loading are not cleared from a spur track and do turn around for reasons not dependent on the freight consignor, it is fair to charge only him for all the sins, operating here with artificially computed car resource losses? In the final analysis, the problem boils down not so much to sharing the guilt as it does to establishing the true reasons for equipment layover, on the basis of which realistic measures can be taken to reduce it.

It seems that the railway workers' position whereby transportation resource losses are attributed to freight consignors in no way facilitates acceleration of car turnaround. I am convinced that a realistic and advantageous result can be obtained only when each freight consignor is responsible for cars delayed awaiting loading, which for that very reason are unable to be turned around, and railway workers are responsible for timely and proficient clearance of the cars from the spur tracks.

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RAILROAD

DISCUSSION OF RAILROAD REGULATIONS

Moscow KHOZYAYSTVO I PRAVO in Russian No 11, 1980 pp 32-34

[Article by A. Khayrutdinov, legal consultant, Margilan Mezhraysel'khoztekhnika, Ferganskaya Oblast: "A Claim Has Been Lodged Against the Railroad. . ."]

[Text] The procedure for settling disputes arising from railway transportation, an exception to the general rule, is established by the USSR Railway Regulations [UZhD]. The carrier must review the claim within the deadline set in Article 175 of the UZhD and notify the claimant of the allowance or rejection of it.

If a claim lodged against a carrier is allowed and required sum transferred, the dispute is settled. But, if money for such a claim has not been transferred, then the claimant must go through a complex operation in order to get it. This is because neither the Regulations nor the Rules for Freight Shipment establish a procedure for adjudicating an allowed claim.

These are the recommendations made in the Practical Commentary on the USSR Railway Regulations* to receive money from a carrier, if the latter allows the claim: "In this case. . . the claimant can obtain a notarized executive endorsement for compulsory recovery of the allowed amount. The executive endorsement concerning notification of the allowance of a claim can be issued during the 6-month period following receipt of the notification. If extant legislation in a union republic does not envision obtaining an executive endorsement, then the claimant can file suit at that time."

This solution to the problem cannot satisfy the claimant if he also has to turn to arbitration authorities after allowance of a claim. Moreover, this also contradicts Article 177 of the UZhD, which permits an appeal to arbitration authorities only in cases where a railroad refuses partially or completely to allow a claim or where an answer from a railroad is not received within the deadlines.

In practice, notification of the allowance of a claim is made in accordance with paragraph 17 of the Statute on the Procedure for Loding and Reviewing Claims By Enterprises, Organizations, and Institutions and Settling Disputes Concerning Economic Agreements. And, although its force does not extend to claims against transportation enterprises and organizations stemming from freight shipments, Gosbank authorities do not hesitate to pay a notification of the allowance of a claim.

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*Orlov, V. G., Vasil'yev, V. F., Mkrtmyan, M. E. "Ustav zheleznykh dorog Soyuza SSR. Prakticheskiy kommentariy." [USSR Railway Regulations. A Practical Commentary]. Moscow, "Transport", 1978, p 258.

Therefore, it would be correct to establish in a standard procedure that a formal response on allowance of a claim, in which information on the transfer of money is lacking, is a basis for indisputable debiting of the amount in a charge against the debtor equalling the specific amount of the fine. Here, the amount of the fine must apply to the account of the specific guilty workers.

It should be noted that a railroad sometimes fails to respond to completely substantiated claims, even though the carrier is given a sufficient time to review them--from 3 to 6 months. Especially prevalent are cases where the amount of the claim is less than R100; meanwhile, there is nowhere to turn. The railroad, in essence, bears no responsibility whatsoever for violation of deadlines and for the quality of their responses. Meanwhile, the railroad has economic ties with thousands of freight consignors and consignees in all sectors of the national economy. It is the railroad which, like no other transportation authority, strictly must adhere to the requirements of the claims procedure for resolving disputes.

In a majority of instances, a railroad in its responses to claims centering around damaged shipments cites certain telegrams issued by the MPS. Freight consignees do not recognize them since they are coordinated only with several ministry-freight consignors and are not coordinated with the freight consignees' higher authorities. It is no accident that the railroad does not provide these telegrams as proof of innocence to arbitration authorities when hearings are held on damaged shipments.

Due to unsubstantiated deviations from requirements, claimants spend extra time and money for a subsequent appeal to state arbitration authorities, which are forced to hear disputes fully solvable in a claims procedure.

It appears necessary to establish, in a standard procedure, responsibility for an unsubstantiated response to a claim, which causes an appeal to arbitration authorities. This can be in the form of a fine from the amount of the suit or of the state duty, let's say.

A response failing to reference the normative document which governs a given juridical relationship, for example, should fall in the category of clearly unsubstantiated responses. This would improve the quality of the claim review and eliminate perfunctory replies.

The railroad's extant procedure for reviewing the majority of claims does not meet growing demands and suffers from excessive perfunctoriness, to the detriment of the clientele.

It is difficult for freight consignees to judge whether cases of damaged shipments are being investigated within the MPS system but, based on responses to claims, one can confirm that they are being compiled exclusively from the materials in the claim and bear a perfunctory character.

In the best case, a statement of damage with a demand for explanations from the appropriate workers, who also can provide a perfunctory reply, especially if the damaged shipment was discovered outside the limits of the given railroad, will be sent to the official investigation into the transportation deficiencies.

In my opinion, the procedure for reviewing claims used by railroad administrations requires a fundamental reexamination.

The railroad divisions have cadres experienced and qualified in investigative techniques and legal service workers for reviewing and compiling responses to claims.

Being closer to the directly guilty stations and their workers, the divisions can more proficiently and qualitatively conduct investigations into the causes of damaged shipments, as well as take measures to insure they are not repeated.

There is a requirement to establish a procedure wherein the receiving party would be obliged to lodge a claim against the carrier's guilty subelement, without expecting the freight consignee at the destination to do so, in order to delimit responsibility between railroad divisions (administrations) when a damaged shipment is discovered and a statement of damage is compiled at points where freight is transferred from one division (administration) to another. Here, a review of claims by freight consignees and other clientele against a division of the destination railroad does not have to be linked to establishment of the causes of the damaged shipment occurring within the railroad's system itself, since this process is an intradepartmental matter.

Such a procedure for lodging claims and filing suits would raise the demandingness during arrival and dispatch of freight en route and the quality of investigations into the causes of a faulty shipment, because railway transport workers themselves would be interested in this.

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RAILROAD

BELORUSSIAN RAIL OFFICIAL DISCUSSES PROBLEMS

Moscow PRAVDA in Russian 19 Nov 80 p 2

[Article by Ye. Tushkevich, Chief, Belorussian Railroad: "The Railroad and the Plan—Transportation, the Moving Force of the Economy"]

[Text] More than 70 percent of all transported freight begins and ends on access ways. The operation of the primary main lines is dependent upon them to a great extent. It is not by accident that a Main Administration for Industrial Rail Transportation has been created in the Ministry of Railroad system. However, tens of thousands access ways with low freight capacities still exist. They are dispersed throughout the entire country and do not enter associations. In Belorussia alone, they number a thousand. The enterprises to which they belong, as a rule do not have transportation shops, and as the result of a weak material-technical base are incapable of maintaining the facility at the required level.

As an example, we cite the poor condition of the approach ways in the association, "Bobruyskshina". Hundreds of cars have accumulated here, and unloading has been impeded, as has the supplying of many enterprises. The administration of our railroad was compelled to place this section on its own balance sheet and repair the lines which were retarding the station's operations. In the same manner, we have taken over an additional 52 lines, including service personnel, during the past four years. The use of machinery to repair and maintain rails and switches, and the organization of their use has resulted in somewhat of an improvement in this situation during that time. Unfortunately, the railroad itself sustained a financial loss in doing this.

Scheduled carriages are not made on the access lines. What does this mean? The ton-kilometer, which is now in essence the "production" of the railroad, did not grow in aggregate, and expense and the numbers of service personnel both grew. As a result, during this period, our labor productivity dropped by 1.3 percent, and the cost of carriage increased by 1.2 percent. Correspondingly, the material incentive funds were reduced.

If the contingent of workers transferred to us and associated expenses had been charged to ancillary operations (as they in truth were) instead of primary operations, the mainline collective would have shown a profit, inasmuch as we demonstrated an increase in labor productivity and a reduction in cost for this type of operation. Such a planning system and accounting approach would have stimulated an effective use of capital (fixed).

Throughout the country, producing and consuming economic regions are situated unevenly. This demands the precise movement of the car inventory on the railroads. Empty cars are directed from consumer locations to areas where materials are procured and mass-produced.

Recently, Belorussia has been considered a consumer region. Coal, fuel, building materials, and fertilizers were shipped here. In recent five-year periods, we have built the Polotsk and Mozyr' Oil Refineries, and now the republic now ships fuel out. The association "Beloruskaliy", the Gomel' Chemical Plant, and the Grodno Association "Azot" are now suppliers of fertilizer not only for Belorussia, but for other republics in the country as well. They also produce materials for major enterprises of the construction industry such as the Mikashevichskiy Non-ferrous Materials Combine, and the Vitebsk Construction Materials Combine. As a result, their importation has dropped. Automotive and tractor associations, and the Gomel' Agricultural Machinery Plant underwent remodeling and were considerably expanded. The association "Bobruyskshina" and other enterprises went operational, and large quantities of their products are shipped by rail to destinations outside the republic. In conjunction with this, the freight flow structure itself underwent changes. The percentage of through freight shipments and imports into the republic dropped, while on the other hand, shipments and local carriage increased. Instead of dispatching empty cars, as had been the case earlier, Belorussia now requires delivery of large numbers of empty rail cars.

Here the principle of planning shipping operations according to an attained level, as before, does not take into consideration a constantly changing situation. The railroad, having no difficulties with the movement of freight, finds itself in a position of not carrying out assignments relating to freight-turnover in ton-kilometers, even though this is not dependent upon the collective. Increasing the import level of freight in the plan negatively affects support for loading operations, inasmuch as it is precisely the increased level of plan imports which reduces the level of incoming empty cars. Furthermore, as the hard and fast principle of priority release of empty cars obtains, in actuality, many cars depart our areas empty. Frequently those empty cars are dispatched in the same direction in which the freight must be shipped. This is absurd! During 1979, more than 105,000 cars failed to be loaded on our line.

Now all main lines and the Ministry of Railways itself have computer centers. This means we have the capability to compute a monthly carriage plan for stations of destination. Unfortunately, the computer facilities are still be under-used, as the monthly plans are being formulated for only the destination railroads. For divisions of the road and for stations, estimates are made, as previously, "by eye", with allowance for the preceeding periods, i.e. "from the attained [level]".

Empty runs of rail cars are unproductive, loss-incurring operations. We need maximum use of empties for shipment of plan freight, and to materially and morally stimulate a reduction of empty runs. For this, we must perfect the management mechanism, efficiently utilize computer technology, and to implement automated control systems for freight flow.

The most important indicator of car use is their turn-around, i.e., the time required to carry out the cycle of operations from one loading to the next. The shorter this time, the greater the volume of freight which can be transported with the existing car inventory. This indicator correctly determines the main factor--the quality of car use on a country-wide scale. Regarding the main lines and their divisions, the indicator being considered now does not actually reflect true use of the car inventory. This is why: the existing inventory of cars on the railroad is engaged not only in internal operations and loading. On the main lines, afterall, through carriage by loaded and empty cars is underway, those cars being released to other railroads. In a word, a great segment of the rolling stock is not associated with the scale of loading operations. Thus, according to established practice in the computing of car turn-around for the railroads, loading is not considered, but a certain conventional indicator, "operations".

It would be well not to have empty runs at all, as they only generate expenses. However, in actuality, empty runs are still inevitable. The inexact nature of planning and computing turn-around indicators has a ruinous affect upon the work results of the railroad workers. Here is an example. In January of this year, the collective successfully fulfilled all norms and standards determining car turn-around. However, with the change of the ratio between the scales of empty and loaded, of through and local car flow, unrelated to quality of operations, turn-around of cars was "delayed" by 1.2 hours against the plan, and as a result, we incurred a considerable financial loss.

There are other instances when divisions of the railroad, not fulfilling a single one of the constituent elements, (speed, idle-time) under favourable conditions and ratios of other car flow scales, successfully "fulfill" the assigned norm for car turn-around. What does this say? There do not yet exist technically founded normatives or standards for the planning of assignments for the use of the rail car inventory. The planning is accomplished by basing it upon what has been attained. The collective in the current year achieved a reduction of idle time for cars, and the norms for the following year are even more stringent. And the converse is true: if the collective fails to fulfill the assignment, its norm is either left as it was previously, or adjusted more favorably. Such a planning system, of course, does not stimulate a growth in the turn-around of transport equipment. Such a system must be renounced.

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RAILROAD

CONFUSION OVER RAILCAR WORKERS' RESPONSIBILITIES, REQUIREMENTS

Moscow GUDOK in Russian 6 Jan 81 p 2

/Article by A. Musayelyants, chief of the railcar service, Riga: "What are the Railcar Worker's Duties?"/

> /Text/ "...to improve the organizational structure of management..." (From the draft of the Basic Trends)

What is included in the responsibilities of the workers of the various transport services? Everything is more or less written down, but many perplexing questions arise. We are railcar inspectors, but we steam and wash tank cars. Is this our responsibility? Most likely this is the freight workers' job. After all their job is to keep an eye on the filling of cargo and to determine which petroleum products can be put into an empty car without preparation. Since they know the loading plan, isn't it more convenient for them to prepare the tank cars?

A similar situation exists with boxcars. Cargo recipients are required to clean the cars of the remnants of cargo. The acceptance and transfer officer must receive a clean railcar. That is how things were at one time. Then railroad station workers watched over every boxcar because they knew very well that if the acceptance and transfer officer made a mistake that they and no one else would have to do what the cargo recipient had not done. They saw to it that a good grain car was not used to ship fertilizer, livestock or glass containers.

Now things are different: the station fines a client for failing to clean an empty car. And that is all. It turns out that it is to the advantage of the railroad station workers when a lot of railcars contain remnants of cargo.

There is no understanding who got the idea of considering grain guards as part of the train. They are more like packaging. However, railcar inspectors not only repair the guards, but also install them, load them on the empty car and unload them. And it isn't the loaders that do this, but skilled carpenters to the detriment of their basic job.

And something that is clearly in the realm of packaging is containers. There are more and more container sites, which are equipped. But they are not allocating any space at the sites for the repair of containers. This is how they reason: the repair of containers is the concern of the railcar inspectors, let them have the headache. Apparently, based on this kind of thinking, they hoard defective containers in the yards which they nonetheless carry on the books in the railcar depot. But the cars are sent to be repaired only when they begin to hinder freight operations.

There are a multitude of operations which for unknown reasons have been made the responsibility of the railcar inspectors. Why, for example, does the train marshaller uncouple the automatic couplings when the inspector comes right after him to unhitch the hoses? Why are the PTO /equipment maintenance point/ workers responsible for ensuring that trains are correctly coupled? How can the inspectors switch the modes of the air distributors when they do not know if a car is empty or not? And if the car is loaded, what is the weight of the cargo? Why must we prepare and hang the tail signals? Isn't this the direct responsibility of those who form the trains?

The situation with passenger cars is no better. They are complicated in design and it is a lot of work to repair them. Repairs demand the constant monitoring of the commanders. What is it that we actually do? First of all, we do the job of a conductor. At all passenger depots from 50 to 70 percent of the entire staff are conductors. The solution of various conflicts and educational work take up a lot of time.

The transfer of conductors to the railcar organization broke up the unified system of passenger services. The passenger main administration schedules additional trains without knowing how many conductors are available at the points where the trains are formed, etc.

It is nearly impossible to find a satisfactory explanation as to why the railcar inspectors have to wash sheets, sew, repair and provision trains with candy, tea, and dishes. This should be the job of the railroad administration for workers' supply, or, more likely, the workers of the unified passenger complex.

At present the passenger main administration is responding only formally to all of these problems. The trains are scheduled - see to it that they have everything they need. You were not able to manage? They criticize the railcar inspectors.

I would like to be understood correctly. This is not an attempt to make things easier for us. No, we are prepared to work. But at what? The condition of the railcar park is getting worse. Nearly 20 percent of the railroad staff are railcar inspectors. And they have too broad of a range of duties. Just imagine how much our commanders have to know. As engineers they must have an excellent knowledge of rolling stock and how to repair it. To do a good job of steaming and preparing railcars they must be "grounded" in the field of freight work. They must be skilled in deciphering the rules for carrying passengers, selling tickets, washing, repairing, storing and cleaning linen and bed sheets. Don't we require too much of the railcar inspectors?

One can say with confidence that 50 percent of the work time of the chiefs of the railcar service is spent doing jobs that should not be included in their primary responsibilities. What do the chiefs of the divisions and railroads want of us? How many boxcars are washed, how many tank cars are steamed, and how many grain guards are repaired? What about the number and reasons for delays of trains, uncouplings of railcars and instances of waste. Logically these kinds of questions should be asked. Such questions, for example, as how many railcars have been repaired? How many faulty railcars are there? How many extra wheel pairs or air distributors are available?

The interests of transport require that the responsibilities be distributed among the workers of the various services in accordance with the functions that belong to them. This will make it possible for each to do his own job. Then we will achieve success more quickly.

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RAILROAD

INEFFICIENCIES OF COAL TRANSPORT SYSTEM ATTACKED

Moscow MATERIAL'NO-TEKHNICHESKOYE SNABZHENIYE in Russian No 10, 1980 pp 50-53

/Article by Yu. Grechanik: "The Arithmetic of Transporting Coal"/

/Excerpt/ Confusion Instead of Cargo

Unfortunately, the growth in coal extraction in the Soviet Union is being accompanied by a worsening in its sorting. Some pieces are a meter in size when the standard calls for not more than 30 centimeters. The moisture content, the amounts of barren rock, sulfur and ash are increasing. During the last ten years the delivery of such low quality product for just the power station workers has increased by 60 million tons per year.

For example, coal trains coming from the eastern regions to the European USSR are often loaded with up to 40 percent barren rock and water. This means that two fifths of the rolling stock are being put to poor use. And it is precisely this line that carries the greatest amount of coal. Hundreds of thousands of railcars could be freed for other cargo by increasing its useful content by only five percent.

The excessive moisture of the coal means that when it is transported during the winter it freezes into a solid mass. It cannot be unloaded while moving. One has to wait. Breaking the coal up not only requires material expenditures, but time. Idle time increases. The railcars that are damaged when breaking up the coal are sent in for repairs. And once again they are out of operation. As a result there is a very noticeable reduction in the use of rolling stock. The railroads are transporting significantly less cargo than they could.

The high content of ash, sulfur and other foreign matter in the coal hastens wear of the power equipment and even leads to accidents. The Main Administration for Interrepublic Deliveries of Coal of the USSR State Committee for Material-Technical Supply knows about this. Nonetheless, the imperfect system for fuel deliveries is preserved. Different kinds of coal are loaded on the same train, but the coal has been given the same level of quality. The Administration of Standards of the USSR Ministry of the Coal Industry is responsible for checking the quality of the coal. In other words control rests with the shipper itself. There is no unified, all-encompassing State standard for the strict, objective control over the quality of the fuel. As a result, the power station workers are forced to monitor the quality of the coal that they receive. However, the existing rules permit them to do this only with the participation of the supplier. While waiting for a representative from the supplier, the railcars often are not unloaded for several days.

The poor quality of the coal presents the power station workers with many complicated, technical problems. They have to create new equipment, rated for the use of coal, which does not differ in good properties. The need arises to erect powerful drying plants and units.

But this still does not solve the transportation problem. Coal with an increased moisture content and cotaining barren rock still has to be transported.

Apparently, there is another way out of this situation. Experience shows that it is considerably more advantageous to enrich poor quality fuel at the place it is mined. The technology for this process is rather well developed. Within the USSR Ministry of the Coal Industry there are already such factories and plants. They process many millions of tons of coal each year. But many more such plants and factories are needed than now exist.

Carrying Coal to Coal

Such a situation is entirely permissible if it is caused by extreme circumstances. For example, such as these. In 1974 at the open pit coal mine which supplies the nearby Angrenskaya GRES /state regional power station/ of the Uzbek SSR in connection with the diversion of the river the extraction of fuel was temporarily disrupted. Naturally they had to resort to shipping coal from afar.

However, the need to do this passed quickly. But they continued delivery of coal from the Kirghiz SSR. Refusals to accept these deliveries by the supply organs of Sredazugol' /Middle Asian Coal Administration/ were not taken into consideration. They also did not react to the fact that the Kirghiz coal was not rated for that particular power station and was ruining the power equipment. Only the growing accumulation of coal, which exceeded many times the allowable supply, led to action. A solution to the situation was found. But what sort of solution? They decided to ship the Angrenskiy coal, which the local GRES was equipped to use, to the other end of the world - to the Kazakh SSR and the Kirghiz SSR.

Cross haul heavy trains began rolling. Some trains ran from the Kirghiz SSR to the electric power station with unrequested cargo. Other trains went in the opposite direction with the same amount of Angrenskiy fuel. This state of affairs did not last a month or a year, but five years. As a result millions of tons of coal were transported, which required more than 30,000 railcars.

It would seem that the solution is apparent. But still not everyone reached this solution. In the draft for coal shipments in 1980 and subsequent years Soyuzglavugol' again planned trains to Angren and from Angren. Only the strong objection of the USSR Ministry of the Railways prevented the acceptance of these shipments for execution.

The described event is a clear though far from unique phenomenon. Cross haul shipments occur not only on the Middle Asian Railroad but on other railroads as well. For example, the Ukrainian and West Siberian railroads "exchange" coking coals. Every year millions of tons of coking coal are shipped from the Kuznetsk Basin to various regions of the Ukrainian SSR, where it is converted into coke and returned to its point of origin. As a result the railways on this line are constantly extremely overburdened.

Coking coal from the Donetsk Basin travel in the opposite direction. And, of course, not without "justifications" - it is needed by several enterprises in Western Siberia. For example, one West Siberian enterprise needs Donetsk coal because its equipment requires it. A question arises in connection with this. Why was an enterprise built so far away from the fuel that it has to use? The Yurginskiy abrasives plant also receives coke from the Donetsk Basin. The problem is that the use of local fuel "increases the relative expenditure of coal and electricity." The fact that the shipping costs are considerably greater and that the railroad system is congested is not taken into consideration.

Coal for producing electricity is shipped from West Siberia to the Ukraine. And not in small amounts. Can it really be that there is no similar fuel in the Donetsk Basin? And if so why is almost the same amount of fuel shipped from the Ukraine in the opposite direction - to Gor'kiy and Yaroslavl'? Wouldn't it be more expedient to substitute the deliveries of Donetsk coal to these locations with direct deliveries from the Kuznetsk Basin?

This matter has been studied by competent organizations. A very specific answer has been given to this question. The USSR Gosplan and the USSR State Committee for Material-Technical Supply, the USSR Ministry of the Railways and other involved ministries and departments have decided to put an end to the shipping of Donetsk coal to Yaroslavl' and Gor'kiy oblasts. Jointly developed measures require that these oblasts be supplied with coal from the Kuznetsk Basin. More than ten years have passed since this decision was made. The situation has not changed.

Great Distances Are Not So Bad

These words from the son, as economists will confirm, are true, but not in all cases. For example, great distances are bad when transporting coal. At a certain point long distance shipping of coal becomes irrational. Such coal costs the consumer too much.

But, apparently, not everyone who plans transport-economic ties agrees with this. One unwillingly reaches this conclusion whey he learns about the increase in the average distance of railroad coal shipments. During the past four years alone this distance has increased by 98 kilometers.

What are the negative consequences of this increase? Alas, there are quite a few of them. During the past four years the consumer has had to pay 180 million rubles more for the transport of coal than he had to pay for the previous average distance. The work volume for the railroad workers has increased by 75.5 million ton-kilometers. For the national economy this means a loss in actual capability to ship an additional 46.5 million tons of cargo

Of course, the fact that coal extraction is increasing primarily in the eastern regions and the customers are largely in the European USSR can not but lead to an increase in the distances for shipping coal. Unfortunately, apart from this unavoidable aspect, there are quite a few unjustified excessively long distance routes. Thus, one million tons of Kuznetsk coal is transported each year over a distance of better than 4,000 kilometers to Arkhangel'sk and Murmansk oblasts and the Karelian ASSR. This area is within reach of similar fuel from the rich Pechora Basin.

Why is this happening? The basic reason is that the Kuznetsk coal is half the price of Pechora coal. No less important is the fact that the railroad tariff for long-distance shipments has been revoked. Therefore, the cost of long-distance shipments is such that even massive shipments can be shipped to the end of the world. For this reason the delivery of fuel from the Kuznetsk Basin, although it costs 2.5 times more than delivery from the Pechora Basis, still is advantageous.

However, the arithmetic is of a local significance. It does not agree with the interests of the development of the national economy on the whole. This was justifiably the target of the USSR Gosplan and USSR State Committee for Material-Technical Supply decision to put an end to shipping Kuznetsk Basin to Arkhangel'sk and Murmansk oblasts and the Karelian ASSR in connection with the possibility of using Pechora Basin coal in these regions.

The lenth of the tracks from the Kuznetsk Basin to Dushanbe is more than 4,000 kilometers. The distance to Tashkent is one third less. But such distance does not bother those who are not concerned about transportation losses and railroad congestion. Nearly 400,000 tons of Kuznetsk coal are delivered each year to municipal and housing enterprises in those Middle Asian cities. Meanwhile it would be advantageous to transfer them to a local fuel and gas and fuel oil. The shipments cost the consumers some 622,000 rubles and provide the railroad workers with an additional 1.3 billion ton-kilometers of work.

This opinion was sound nearly 11 years ago, when the USSR Gosplan and the USSR State Committee for Material-Technical Supply and the USSR Minisitry of the Railways and other involved ministries and departments issued a decree on this matter. The decree criticized such shipments in view of the opportunity and need to transfer the housing and municipal enterprises of Middle Asia to a local fuel. But the decree remained unfulfilled.

When Users are Nearby

Excessive long-distance shipments, figuratively speaking, are one end of the stick, which is a major problem for the railroads. The other end of the stick are short hauls. The irrationality of short hauls is no less than of the long-distance shipments. The travel time of a railcar is nothing compared with the idle time connected with the loading, unloading, maneuvering and other necessary work. It does not exceed 5 to 7 percent of its turnover. The costs per ton-kilometer for short hauls are tenfold greater than for the average network. The transport of cargoes over small distances (up to 200 kilometers) sharply reduce the use of rolling stock and the total efficiency of the railways.

According to data of the USSR Ministry of the Railways, last year at a distance from 100 to 200 kilometers 92 million tons of coal were delivered, from 50 to 100 kilometers 67 million, and from 30 to 50 kilometers 44 million tons of coal. More than 105 million tons of coal travelled within a radius of 30 kilometers. On these microroutes alone 1,600,000 railcars were tied up for a long period of time.

The statistics on the reduction of short haul shipments are not too comforting. During the past four years the amount of coal delivered at a distance of 50 to 100 and 30 to 50 kilometers decreased by 4 million tons. At the same time there was a 6 million ton increase in the amount of coal transported within a radius of 100 to 200 kilometers.

The time has come to wage a decisive battle t free railroads from the need to make short haul deliveries. There are numerous ways to solve this problem. One solution is to develop industrial transportation of an uninterrupted nature: conveyor transporters, cable and overhead systems, container and pnuematic pipelines. The efficiency of this progressive type of transportation is 1.5 to 2-fold greater than the railroad. The extensive adoption of this type of transportation is still not receiving the necessary attention.

At short distances and when the consumer of fuel is located far from the railroad it is expedient to use automotive transport. In all conditions the automobile will deliver the cargo, as they say, from door (sender) to door (recipient).

The rationalization of coal shipments covers a broad range of questions. Their rapid solution depends upon the joint efforts of many ministries and departments, including Gosplan, Gossnab, Gosstandart, the ministries of the coal industry and the railways.

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RAILROAD

PROGRESS IN BAM CONSTRUCTION DESCRIBED

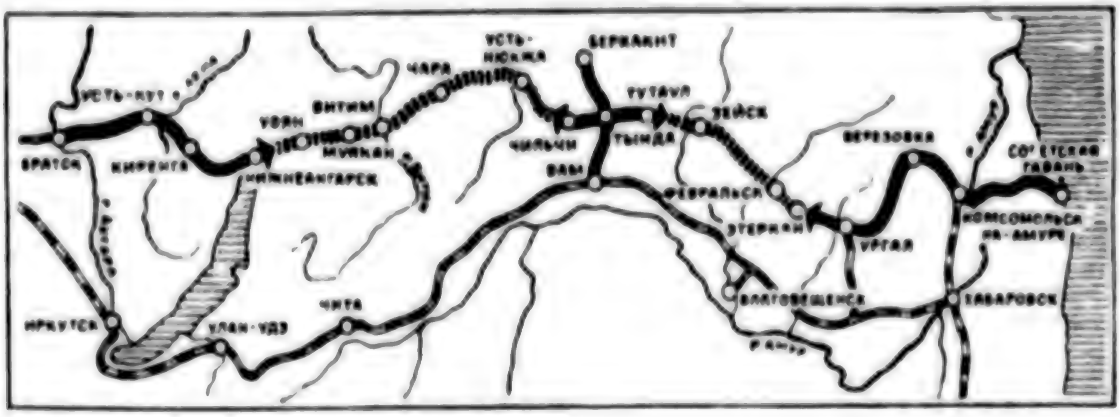
Moscow EKONOMICHESKAYA GAZETA in Russian No 48, Nov 80 p 3

[Article by E. Vasil'ev, Engineer: "On the Way of the BAM"]

[Excerpt] At the present time the fundamental strength of the building construction is focused upon the building of the new sections of the main line in the Amurskaya and Chitinskaya oblasts, Buryat, ASSR. The laying of the railroad track is presently being conducted as shown in the diagram, from the Nizhneangarsk Station to the east and from the Chil'chi Station to the west. The track layers rushed from Tynda and Tutaul to the east, to Zeysk, and from Urgal and Eterkan to the west, toward Fevral'sk.

Great success has been achieved this year in the construction of the Baikal tunnel. The joint directorates of the building project, "Bamtonnel'stroy" finished the passageway of the so-called small tunnel in October, 3 months earlier than the planned date. The transport drainage system pierced the Baikal mountain range.

Socialist competition spread widely among the builders of the main line in time for the esteemed 26th CPSU Congress. Each collective will strive to make the greatest contribution. It is projected that by the end of this year the volume of construction-assembly work will surpass the 5-year goal by 130 million rubles. It has been decided that by the opening of the Congress tunneling [work] on the main Baikal tunnel will be completed, before the deadline, track will be laid up to the Ust'Nyukzha Station, and a number of other important tasks will also be completed ahead of schedule.



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RAILROAD

BRIEFS

VL60 ELECTRIC LOCOMOTIVE--The VL60 electric locomotives with an independent drive of the traction motors have done an outstanding job of selling themselves. Specialists from the Vikhorevskiy Locomotive Depot designed this plan. Within the past seven years they have been using these trains with a heavier weight along one section. N. Shamrayev, the chief of the depot, says that the public planning and design office is now developing a two-section electric locomotive based on the VL60. We want to call it the VL60 BAM. It will pull trains weighing up to 8,000 tons. One of its sections has already been successfully tested. In just three months nearly 167,000 tons of cargo has been transported in excess of the norm; and 7,000 kilowatt-hours of electricity have been conserved. The speed attained was 43.8 kilometers per hour against an assignment of 35.1 kilometers per hour. A. Zatsepin, a machinist, recalls that once when testing a malfunction in the contact network they were forced to come to a halt on the Gidrostroitel' - Padunskiy Ramps on a long grade. The train weighed 5,150 tons. Even in good weather it would be difficult to move such a train. However, when they were given the green light, they were able to move the train in the first attempt. Now the depot is equipping a second section, eliminating shortcomings detected during experimental trips on the first section, and are drafting the technical documentation. The new locomotive is a labor gift from the collective to the 26th CPSU Congress. [By K. Vaganova, correspondent for the newspaper Vostochno-Sibirskiy put'] [Text] [Moscow GUDOK in Russian 10 Jan 81 p 4] 8927

PROBLEMS ON MOLDAVIAN RAILROAD--We all know that the coordination of the work of all forms of transport brings great advantages. But on the Moldavian railroad this matter is not as it should be. Let us take, for example, the Reniyskiy sea trade port. During the years of the Tenth Five-Year Plan the port's collective regularly failed to fulfill its plan for unloading railcars. Now many of these railcars are little more than warehouses on wheels, waiting from two to more months to be unloaded. But the port workers are not concerned about this since they are successfully fulfilling their plan for freight handling and are leaders in the socialist competition. Such is the situation in the planning of shipments in a mixed railroad-water transport. This situation cannot speed up the turnover of railcars. We believe that the time has come to reexamine the system of material responsibility for the use of locomotives, railcars, ships and automobiles. Now, for example, extensive use is made of the system of imposing fines for the above norm idle times of railcars. But as many years of experiences have shown, this system is not justifying itself. The work experience of the L'vov railroad, with which we have a familiarity, will help to correct this situation. This is how things stand on the L'vov railroad: matters having to do with the loading and unloading of railcars at enterprises are interconnected. The rate for dual operations with a restriction on them by specific lines has made it possible to sharply improve the use of rolling stock. Isn't it time to institute this procedure and to adhere to it in the interrelationships of the railroad with all of its steady clientele? [By B. Barinskiy, chief of the technical department of the Moldavian railroad] [Text] [Moscow GUDOK in Russian 6 Jan 81 p 2] 8927

NEW RAILROAD LINE IN TATAR ASSR--Regular traffic was opened yesterday on the railroad that connects the distant cities of Agryz and Mendeleyevsk in the Tatar ASSR. By tradition the passengers on the first train were the builders of the line, who fulfilled their pledges ahead of schedule in honor of the 26th CPSU Congress. The new railroad covers 100 kilometers along a difficut terrain. The builders had to erect nine bridges and two viaducts across the tributaries of the Kama River. Housing for the railroad workers was built along the tracks. During the precongress watch the brigades of rail layers G. Gerasimov, installers R. Suleymanov, and finishers A. Starkov excelled. The track leads to the south. It will connect Naberezhnyye Chelny with the Moscow-Sverdlovsk railroad. The railroad will pass over the Kama River on the dam of the Nizhnekamskaya hydroelectric power station that is now being built. [Mendeleyevsk, Tatar ASSR] [Text] [Moscow GUDOK in Russian 9 Jan 81 p 1] 8927

OCEAN AND RIVER

RSFSR RIVER FLEET MINISTER DISCUSSES ACCOMPLISHMENTS, GOALS

Moscow VODNYY TRANSPORT in Russian 15 Jan 81 pp 1-2

[Article by L. V. Bagrov, RSFSR minister of river fleet: "The Five-Year Plan of Russia's Rivermen"]

[Excerpt] The material and technical base of the Ministry of River Fleet was substantially bolstered in the years of the 10th Five-Year Plan. Assignments were fulfilled successfully for activation of fixed capital, for the volume of capital investments and for construction and installation work. This made it possible to considerably augment the fixed capital of the Ministry of River Fleet. By comparison with the Ninth Five-Year Plan the growth of traffic was 23.4 percent and the growth of cargo traffic 18 percent. Traffic grew at a faster-than-average pace in the regions of Siberia, the Far East and the Far North. The carrying of cargo to the oil and gas fields of Tyumenskaya and Tomskaya oblasts increased 1.7-fold. Assignments for traffic and cargohandling in ports were overfulfilled.

Shortcomings in the employment of vessels and in the organization of the transport process, along with a number of other causes unfortunately prevented the Ministry of River Fleet from fulfilling the 5-year plan for cargo traffic.

In 1980 rivermen of the Russian Federation did a great deal of work to meet the needs of the country's economy for shipment of cargo on the waterways, which made it possible for the industry to fulfill the plan for 1980 and to increase the volume of operation over the 1979 level 6.2 percent in tonnage and 5.2 percent in ton-kilometers.

Collectives of the central and northwestern shipping lines handled the movement of grain, vegetables, melons and potatoes during the last navigation season. Assignments were fulfilled for delivery of building materials and metal. As before, priority attention was paid to cargo shipments in the eastern basins. The Irtysh and West Siberian shipping lines delivered 16.4 million tons of cargo to the oil and gas fields of West Siberia, which is 200,000 tons more than set forth in the plan. The carrying of cargo to regions north of Salekhard was also increased 23 percent over 1979. Collectives of the Lena United Shipping Line and the Yenisey Shipping Line delivered to consumers all cargo reaching ports for transshipment of rail and maritime freight. On the Yana River 43,000 tons of cargo were carried over and above the plan.

The effort of the shipping lines of Siberia and the Far East to guarantee the shipment of cargo to the northern regions of the country has been praised by USSR Gossnab, a number of oblast party committees and union and republic ministries.

These results were achieved thanks to the selfless labor of the workers of the fleet and on shore, universal use of the know-how of advanced collectives and production innovators, and improvement and development of socialist competition in the industry.

At the same time we must note that cargo vessels were not satisfactorily employed in the Ministry of River Fleet as a whole. Planning targets were not met by any type of vessel. The increase of idle time both waiting for cargo and after loading indicates insufficient organizational work by traffic departments of shipping lines and deputy chiefs of shipping lines for operations.

At the same time we have examples of good performance by operations departments. In the 10th Five-Year Plan the cargo traffic of the West Siberian Shipping Line increased 43 percent, and gross productivity of tugboats increased as follows: 7.7 percent for dry cargo, 12.3 percent for rafts, and 18.7 percent for dry cargo tonnage. The operations department of the West Siberian Shipping Line was initiator of organization of the operation of the fleet on joint routes in order to establish responsibility both of shipping line enterprises and also of customers for the operation of the route.

The constant attention of every joint line--the organization of socialist competition for fulfillment and improvement of operational standards on these routes--has yielded constructive results in the past and is still doing so. In 1980 15.8 million tons of dry cargo were carried on joint routes, or 59.2 percent of the total volume. The shipping company develops shipments in large tug-barge combinations; in 1980 their volume reached 6 billion ton-kilometers and increased 1.5-fold over the last 3 years. Comrade Dudanets, chief of the shipping company's operations department, deserves a great deal of the credit for this.

What are Russia's rivermen called upon to do in the first year of the 11th Five-Year Plan? In the 1981 shipping season the Ministry of River Fleet is to carry a cargo volume of 505 million tons, to handle a cargo traffic of 250.2 million ton-kilometers, which means respective increases of 5.5 and 10.2 percent over 1980. This is a very strenuous assignment. It is sufficient to say that dry cargo traffic alone is to increase 11 percent. This means that a peak effort will be needed.

Fulfillment of this year's plan is not assured unless collectives of shipping companies correct serious shortcomings in operations and vigorous use is made of the potential that exists for increasing the volume of cargo carried for the economy. There is unused potential in every one of our subdivisions. So far operations have not been improved by our leading shipping companies: Volga United (chief K. K. Korotkov), Volgotanker (chief V. V. Permyakov), nor the Pechora (chief V. A. Makeyev) and the East Siberian (chief V. D. Skupov).

Increasing the efficiency of employment of the fleet should become the principal direction pursued in the operational performance of shipping companies and the central headquarters of the Ministry of River Fleet in 1981, for only this will make it possible to perform the assignment of increasing the gross productivity of self-propelled and nonself-propelled cargo vessels in the current 5-year plan which was set in the decree of the CPSU Central Committee and USSR Council of Ministers entitled "On Measures To Develop River Transport in the Period 1981-1985."

In the upcoming shipping season it is indispensable to raise substantially the level of management of operation of the fleet in handling interbasin traffic, to improve the organizational structure of traffic control over operation of the fleet, and to intensify the attention paid to employment of vessels on joint interbasin routes and to speeding up the turnover of the fleet within shipping companies.

In certain shipping companies utilization of dry cargo vessels was not as good in the last shipping season as in 1979. Indicators of the productivity for the dry cargo fleet dropped for the following shipping companies: Volga--Don, Irtysh, White Sea--Onega, East Siberian, and the Kuban'. Employment of the dry cargo fleet was particularly unsatisfactory in the Yenisey and Pechora shipping companies. About 16 percent of the planned operating time of the cargo fleet is being lost because turnaround time for loading in ports is excessively long on the Yenisey, because they are being kept idle during repairs and because of other shortcomings in operational performance. In effect one out of every six vessels in the shipping company is withdrawn from the shipping process for the entire season.

There is a need to continue and improve the organization of shipments in large pushed tows so as to bring the traffic handled by pushboats with a capacity of 2,000 horsepower or more up to 24-25 billion ton-kilometers, which is equivalent to a growth of at least 10 percent over the 1980 level.

More than once the Volga United Shipping Company has been criticized for insufficient introduction of the large-tow method of moving cargo. It must be said that the managers of this shipping company have not drawn the proper conclusions. In 1980 this shipping company's cargo traffic in large tows was only 4.3 billion ton-kilometers, and the increase over 1979 was only 2.7 percent. The work performed by each powerful diesel pushboat during the entire shipping season has remained at practically the 1975 level.

The Ministry of River Fleet has taken a number of steps in the past year to improve the supply of cargo-handling equipment to ports, portal cranes above all. As a result the indicator of the supply of machinery reached the optimum level of 2.25 cranes per standard berth (100 running meters). This has made it possible to regularly augment the volume of cargohandling and to overfulfill the plan for 1980 by 1.4 percent. At the same time the rate at which vessels are processed in ports, the transit fleet above all, is increasing extremely slowly, and as a consequence unproductive idle time is substantial.

The situation with the processing of the fleet in the berths of customers is still causing great alarm. Above-plan idle time of transit vessels in such berths amounted to 25 million tonnage-days. Customers' docks operated especially poorly in the Yenisey, Lena United, West Siberian and Irtysh shipping companies. At the docks of the Ministry of Construction of Petroleum and Gas Industry Enterprises in Tyumenskaya and Tomskaya oblasts alone above-plan idle time amounted to more than 2 million tonnage-days.

In the upcoming shipping season our ports must process 742 million tons of cargo, increase the volume of output of rock products to 275 million tons, bring the rate of cargohandling of the transit fleet at the docks of ports and customers up to 2,260 tons per vessel-day, reduce average freight car processing time in ports by at least 3 percent from the figure reported for 1980, and bring the level of fully mechanized handling of packaged cargo up to 91 percent.

All shipping companies and riverports must base their operation on widespread dissemination and introduction of progressive initiatives, the further intensification of the processing of the fleet on the basis of the know-how of the Leningrad Transportation Junction, and on increasing the efficiency of utilization of capacities and every cargo-handling machine. In 1981 106 newly delivered cargo-handling machines must be put into operation, 370,000 pallets need to be made, and 56,000 containers need to be repaired.

There is a large potential for improved use of our transport fleet by providing a full range of services in the roadstead of the largest ports, by organizing nonstop servicing of vessels carrying through cargo, and by combining to a maximum the operations of full servicing with freight handling at loading and unloading points. We have already acquired experience in this important area, above all at the transportation junctions of the Northwest, Volga United and a number of other shipping companies. We need only to apply this know-how more rapidly and in 1981 to achieve a saving of at least 5 million tonnage-days in the full servicing of the fleet.

Mention should also be made of the fact that shipping companies and ports are doing a great deal of work to mine from riverbeds and carry in river vessels a large amount of nonmetallic minerals for the construction industry. For instance, in 1980 alone more than 260 million tons of these materials were mined, which is much more than the planning targets. We will also continue to improve this work in the future.

Going back again to the results of the past shipping season, I would like to demonstrate the importance of smooth organization of cargohandling in shipping companies and in the Ministry of River Fleet. Unfortunately there is nothing here to boast about.

Introducing the know-how of the Leningrad transport workers, most shipping companies and ports have operated smoothly with railroads and rail stations. Railroad car processing time was brought down 4.9 percent from the 1979 level.

But most railroads did not manage the planned delivery of empties to the ports in 1980. For the Ministry of River Fleet as a whole the shortfall was more than 126,000 cars, so that the quota for their delivery was fulfilled at a level of only 74.9 percent. As a result there are today more than 6 million tons of cargo of the economy in riverports and undelivered to consumers. The late shipment of freight by rail puts the collectives of ports in a very difficult situation with respect to preparation of equipment for transshipment and the accumulation of freight for the upcoming shipping season.

In the 10th Five-Year Plan the traffic of exports and imports carried by river-marine vessels developed at a high pace; their cargo traffic increased 42 percent, and the profit plan was fulfilled. River shipping companies have acquired sound experience in operating without breakdown under the conditions at sea, and they are improving the level of their foreign exchange and commercial operations. More than 165 river-marine vessels are continuing to operate in the wintertime in maritime areas which do not freeze after the end of the river shipping season.

At the same time there are still many shortcomings in the organization of foreign shipping traffic, above all in use of the fleet. As in the past we are losing a great deal because of tardy solution of the problems of presentation of foreign cargo for shipment, especially in the wintertime.

The Ministry of River Fleet, which attributes great importance to container shipments, is continuing to supply both containers and container carriers to shipping companies, especially those in eastern basins. But their utilization is still unsatisfactory, which is the principal reason for nonfulfillment of the plan for the traffic of container shipments.

In the 1980 shipping season the average container turnaround time in ports was 16 days for the Ministry of River Fleet as a whole, which included 10 days when the containers stood loaded waiting to be shipped on the waterways. The situation in solving this problem is especially bad in the Lena United Shipping Company.

The 1980 passenger season was also a strenuous one. Passengers and tourists were carried on 1,400 routes with a total length of more than 370,000 km, 28 new routes were opened, 20 stops were added, and scheduled service was increased on 23 routes. The Moskva, Northwest, Volga United and East Siberian shipping companies successfully handled the traffic of tourists and guests for the 1980 Olympics, and a large group of personnel of the passenger fleet was presented awards of the homeland for this performance.

But we have not yet fully met the demands put on other passenger fleets in all areas. The Ministry of River Fleet has received many complaints and statements from workers about shortcomings in serving passengers. We are particularly disturbed by the complaints and statements from passengers concerning the Moskva and Volga United shipping companies, whose managers have been criticized more than once already, but who are not drawing the necessary conclusions.

The plan for passenger traffic in 1981 is strenuous, and fulfilling it requires that a detailed analysis be made in the off-season of the performance of every vessel, port and regional administration and that measures be worked out to substantially increase the efficiency of operation of the passenger fleet and the level of passenger service.

Personnel of the waterways and hydraulic engineering structures have an important role to play in ensuring the efficient and continuous operation of the transport fleet and also in improving its use. As in the past particular attention should be paid to the regions of West Siberia, the Far North, the Far East, where in the 5-year period the ministry has assigned almost half of all deliveries of channel-dredging equipment. The problems concerned with development of the waterways in these regions should be solved mainly by improving the use of dredges, but also by increasing the material and technical capabilities and financial resources of ministries and departments which have an interest in the growth of traffic.

A priority task of waterway personnel in this year is to meet the deadline in opening the Cheboksary locks to the movement of the fleet and to prepare navigable routes on the Cheboksary reservoir.

The waterway administration of the Volga Basin and Glavvodput' [Main Administration for Waterways and Hydraulic Engineering Structures] must provide the necessary supervision over the progress of construction, installation and also adjustment work on the Cheboksary locks so as to guarantee their readiness for the passage of the fleet by no later than 5 April.

The Ministry of River Fleet's industry is performing tasks important to the industry in the field of shipbuilding and the building of machines for installation on vessels. In 1980 collectives of the enterprises fulfilled the plan for output and for the rise of gross labor productivity. Moreover, above 90 percent of the growth of gross output was achieved thanks to the rise of labor productivity.

A most important task of ship repair personnel is to restore the technical condition of the fleet and to prepare all key vessels of the fleet for the opening of the season. This will require earlier commencement of operation of every marine railway in the spring, and at Astrakhan', Volgorechensk, Krasnoyarsk and certain other points their operation throughout the entire winter will have to be organized.

One of the reasons for the increase in the amount of ship repairs is that technical operation of the fleet is not yet on a high enough level, and the rate of ship breakdowns and damage is high. In that connection the practical know-how of crews of the diesel vessel Volgo-Don-5009 (captain-engineer G. Chugunov) of the Volga United Shipping Company and the towboat OT-2024 (captain-engineer L. Sokolov) of the Irtysh Shipping Company, which fulfilled ahead of schedule the assignments of the 10th Five-Year Plan and of 1980 operating without intermediate overhauls and without going into yards over the same period for repairs during the shipping season, which has been commended by the collegium, deserves particular attention and wide dissemination.

On the part of the central headquarters and above all Glavsnab [Main Administration for Material and Technical Supply], Glavflot [Main Administration for Shipping and Ship Repair Enterprises] and the Administration for Personnel and Educational Institutions should extend to shipping companies immediate aid in furnishing enterprises the necessary materials and manpower.

In 1980 the volume of shipbuilding in shipyards increased. Collectives of the Teplokhod Shipyard, the Shipyard imeni III Internatsional, and the Moskva, Neva and a number of other shipyards, which fulfilled their assignments for ship construction, have made a sizable contribution to supplying new vessels to shipping companies.

At the same time the ministry's industry did not meet the 1980 assignment for construction of the fleet.

In evaluating fulfillment of assignments for ship construction we must bear in mind that the share of the fleet received from our enterprises is sizable and represents 64 percent of towboat capacity and 87 percent of the tonnage of nonself-driven and passenger vessels. In that context underestimation of the tasks of further development of shipbuilding in the industry (along with ship repair), of which certain shipping company managers are guilty, is impermissible.

Shipping companies and Glavflot need to take specific steps to carry out the order which calls for a program of measures to radically improve the organization and technology of ship construction. We must energetically introduce specialization within the industry and industrial cooperation among enterprises, accompanied by standardization of hull designs, shipboard systems and machinery, use of modular fabrications, mechanization of manual operations and laborious processes in shipbuilding and above all hull work. Our institutes and project planning and design organizations must extend specific aid to enterprises in this area. It is obviously high time for the Ministry of River Fleet to set up subdivisions (affiliates) of project planning institutes and design offices in the leading shipyards, including subdivisions for mechanizing laborious operations in shops.

Accelerating scientific-technical progress has great importance to the future rise in the efficiency and quality of performance of transport. The staffs of scientific research organizations, project planning and design organizations and production subdivisions have made a definite contribution to the creation of new models of ships and port machinery and improvement of existing ones and to the adoption of new forms of organization of work and progressive new technology.

In 1980 a series of diesel container ships, the prototype of the R-153 towboat, and the first group of diesel cargo vessels of the Sibirskiy class, which are able to operate over an extended shipping season, were put into service. High-capacity mechanical and hydraulic dredges capable of processing up to 1,200-2,000 tons of mineral building materials per hour are being built in series.

At the same time new equipment, up-to-date technology and advanced work methods are not being introduced effectively and are not having the influence they should on the operational and industrial performance of the ministry. Prototypes of new equipment are slow to be built, and the organization of their series production is delayed for many years.

Capital investments amounting to 694 million rubles were allocated in 1980 to development of the ministry's material and technical base, complexes with 887 meters of mechanized berth space were put into service at the Krasnoyarsk, Khabarovsk, Kotlas, Rybinsk and Chaykovskiy ports, the river terminal at Volgograd and a number of other projects for operational purposes were put into operation. Work was completed on reconstruction of the second phase of the White Sea--Baltic Canal, the Osetrovskiy Port, and constructions of the Lesosibirsk and Pechora ports.

Enterprises and organizations of the Ministry of River Fleet built housing with a total floor space of 187,700 square meters, exceeding the plan by 8,300 square meters.

But because of failure to put a number of projects into operation, above all on the part of the Irtysh and Volga United shipping companies, the plan for activation of fixed capital in shore construction was not fulfilled. The Moskva, Amur, Yenisey, Lena United and Volgotanker shipping companies did not work persistently with construction contractors, and as a consequence the plan for construction and installation work was not fulfilled for a number of the most important construction projects and ports.

Because GUKS [Main Administration for Capital Construction] was lax in its supervision, the volume of unfinished construction increased in 1980, there were more frequent cases of construction being held up by the lack of plans and estimates, especially on the part of Lengiprorechtrans and Sibgiprorechtrans.

In 1981 capital investments will be considerably larger, and 12 million rubles more of construction and installation work is to be done than in 1981. More than half of the ministry's construction and installation work will be done in the eastern basins. They will increase 21.3 percent in the West Siberian Shipping Company, 15 percent in the Lena Shipping Company and 9.4 percent in the Irtysh Shipping Company.

This year shipping companies are to put into operation more than 1,000 meters of mechanized berths. Itemized lists of new construction include expansion of the Osetrovskiy Port, construction of the port of Podporozh'ye, the REB [Repair and Operating Facility] imeni Kalinin, the Novgorod Port and reconstruction of the Alekseyevka REB of the fleet on the Lena River. The plan for construction and installation work on mechanized berths at Labytnangi and Nadym has been increased to 19 million rubles.

In order to improve the social and living conditions of rivermen, the plan calls for putting into service housing amounting to 178,200 square meters, children's preschool institutions to accommodate 1,490 children, a 50-bed hospital and a polyclinic to handle 525 visits per shift, for all of which 68.14 million rubles of capital investments were appropriated.

In accordance with the decisions of the October (1980) Plenum of the CPSU Central Committee, managers of shipping companies and enterprises of the Ministry of River Fleet and the Main Administration for Capital Construction, on the basis of a detailed and critical analysis of the results of plan fulfillment for 1980, must draft and carry out practical measures to substantially improve capital construction and increase the efficiency of capital investments in 1981. Principal attention should accordingly be paid to guaranteeing timely and smooth activation of fixed capital and production capacities, to concentration of funds and resources at the most important construction projects, to assignment of capital investments above all to reconstruction and reequipping of enterprises and to speeding up completion of projects already under way.

The party and government are constantly orienting us toward the strictest observance of an economy regime in the expenditure of fuel and energy resources and materials. In 1980 the assignment was fulfilled for reduction of specific rates of consumption of fuel by shore enterprises and the technical fleet. There was a saving of 12.5 million kilowatt-hours of electric power. At the same time assignments were not fulfilled for reduction of standard rates of consumption of fuel in shipping, but rather there was an overexpenditure of 1.3 percent.

Supervision over the expenditure of fuel has been altogether unsatisfactory in the Volga United, Volgotanker, Lena United, and Amur shipping companies, which showed overexpenditures of fuel between 2 and 7 percent.

It is very disturbing that all of 22 percent of the fleet is not meeting ship quotas for fuel expenditure. Directors of shipping companies, of the Fuel and Energy Administration and of Glavflot must define measures for increasing the level of heat engineering supervision on vessels, must mobilize the efforts of heat engineers, group mechanics and ship crews to correct this substantial shortcoming. There must be reliance in this work on the know-how of progressive ship crews who were able to fulfill the shipping plan and at the same time achieve a sizable fuel saving.

Work with personnel will have priority importance in solving the large and complicated problems confronting the industry in 1981. The network of higher educational institutions, of river transportation schools, tekhnikums and vocational and technical schools makes it possible to send 5,600 engineers and technicians and more than 10,000 workers into production every year.

Even though shipping companies are being substantially replenished with young specialists every year, they are having difficulty staffing both the fleet and also shore enterprises. This problem is becoming especially acute because demographic peculiarities are sharply reducing opportunities for obtaining a supply of new manpower. In view of this managers of all enterprises and organizations of the ministry must take immediate practical steps to create and stabilize a permanent labor force in enterprises.

Paramount importance must be paid to making working conditions easier and to mechanizing laborious processes in ship repair and shipbuilding and in cargohandling. Construction of employee facilities, dispensaries, rest facilities, athletic facilities and children's institutions should be expanded.

The party is paying particular attention to improving the management of production collectives and to improving methods and procedures. Whatever section you take, as Comrade L. I. Brezhnev has noted, everywhere you see tremendous opportunities and enormous potential for effective forward progress. But if it is to be utilized, there must be a rise in the level of management in the broadest sense of the word. Purposeful work is required of us if we are to carry out this important instruction.

Today key officials at all levels of the ministry face the task of mobilizing the creative energies of work collectives to ensure respectable homage to the 26th CPSU Congress, an organized opening of the upcoming shipping season and successful fulfillment of planning targets for 1981, the first year of the 11th Five-Year Plan.

The collectives of the Northwest and West Siberian shipping companies, the Volga Basin Waterway Administration, the Omsk and Moscow Southern ports, the Astrakhan' Shipbuilding and Ship Repair Plant imeni Lenin, have been initiators of socialist competition for organized preparation of the fleet and ports for the shipping season and for fulfillment of the plan for 1981 ahead of schedule. High socialist obligations have been assumed by advanced crews of ships in the transport fleet and consolidated mixed teams of port and yard workers. The ministry's collegium and the presidium of the central committee of the trade union of maritime and river fleet workers have approved these obligations and recommended to work collectives that they support the effort of the initiators.

Shipping companies, basin waterway administrations, ports, industrial and other enterprises and organizations, following the initiative of the initiators of the competition, have assumed higher obligations whose fulfillment will make it possible for the ministry to exceed the plan by 2 million tons of cargo carried and 3.5 million tons of cargo handled, to reduce laydays of the transit fleet in ports in excess of the allowance by 1.2 million tonnage-days and to reduce dry cargo delivery time 2 percent for the industry as a whole.

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RIVER FLEET SHIP REPAIR STATISTICS

Moscow VODNYY TRANSPORT in Russian 15 Jan 81 p 1

[Text] Collectives of ship repair enterprises, having gone on the precongress watch and having taken up the initiative of the advanced enterprises in the industry, are staging socialist competition for excellent preparation of the fleet for the shipping season of the first year of the 11th Five-Year Plan on schedule. They have assumed socialist obligations of performing ship repairs at a uniform pace and of completing technical and operational readiness 2-3 days before the deadlines assigned.

Even though the shipping season ended later and weather conditions did not allow extensive organization of operation from the ice, a majority of the shipping companies are operating a bit ahead of schedule.

Collectives of the Northwest and West Siberian shipping companies, of the Shipyard imeni Lenin, and of the Volgotanker Shipping Company, who are initiators of the competition for respectable homage to the 26th CPSU Congress and for fulfillment of the 1981 plan ahead of schedule, are repairing the fleet in an organized way.

The pace at which man-hours are being applied to ship repairs is somewhat higher than the level last year. In all 100 more vessels have been put in the condition of technical readiness than at this time last year. The lag in intermediate repairs of the fleet of the Irtysh, East Siberian, White Sea--Onega and Vyatka shipping companies has been reduced.

Yet in those shipping companies, and also in the Yenisey and Volgotanker shipping companies there is a great strain in preparing the fleet and especially in the performance of intermediate repairs. The laying up of the fleet for the winter has not even been completed, there are ships which have not been unloaded and have not been protected. There is a lag in repairing large-capacity and high-speed vessels and fleet for tributaries.

The volume of repair has on the whole increased somewhat over last year. The reason is the intensive rate of wear of the fleet and damage from breakdowns.

An extensive program has been outlined for restoring the underwater portions of hulls and screw and rudder complexes. More than 2,300 vessels have already been hauled ashore, and about 700 of them have received intermediate overhauls. The operation of slips, docks and caissons will continue through the winter at Irkutsk, Krasnoyarsk, Leningrad, Voznesen'ye, Kuybyshev, Rostov, Astrakhan' and Kaliningrad, where another 800 vessels still have to be drawn up, 250 of them for intermediate overhauls. Nevertheless, about 600 will have to be hauled up in the spring. The shipping companies of the eastern basins have a tremendous amount of work to do regarding freezing.

At the present time more than 1,000 main and auxiliary diesel engines have been lifted. But even now there is an acute shortage of the principal models of diesel engines.

Directors of the Shipyard imeni Lenin, and the Uritskiy, Tol'yatti, Nevskiy, Balakovo and Pamyat' Dzerzhinskogo should take exhaustive measures to fulfill the plan for general overhauls and the shipment of engines to the shipping company.

Many ship repair yards are not fully staffed. Shipping companies and shipyards should make more extensive use of ship's crews in repairs. There is a particular shortage of ship repair specialists in the Irtysh Basin. The shipping companies of the central basins should send workers to extend practical assistance to the enterprises of the Irtysh Shipping Company. So far this has been done only by the Volga United, Kama and Northern shipping companies.

There is a strain in ship repair work at the Krasnoyarsk SRZ [Ship Repair Yard], the Usol'ye SRZ, the Zaozernyy REB, the Shipyard imeni Butyakov, the Pamyat' Kirova SSRZ [Shipbuilding and Repair Yard], and the Kuybyshev SRZ for the petroleum tanker fleet.

Ship repair personnel have an important reserve in using progressive methods of organization of work and progressive technology. The team job contract method and creation of mixed and specialized teams in which extensive use is made of ship crews should be the principal organizational form of work in ship repair.

For collectives of industrial enterprises, ports and other subdivisions engaged in ship repair the most important task at present is to correct the shortcomings that exist and to prepare the fleet competently and on time.

Survey of Progress in Ship Repair as of 1 January 1981, in percentage

Shipping Company	For Fleet as a Whole		Intermediate Ship Repairs Alone	
	Planned	Done	Planned	Done
1. Volgotanker	32.0	32.3	32.0	32.1
2. Volga United	32.0	32.9	32.0	33.5
3. Moskva	32.0	33.1	32.0	32.7
4. Kama	32.0	32.2	32.0	32.0
5. Vyatka	32.0	34.2	32.0	27.7
6. Belaya	32.0	32.2	32.0	33.4
7. Volga--Don	27.0	30.5	27.0	27.1
8. Kuban'	27.0	28.5	27.0	27.9
9. Northern	31.0	33.9	31.0	31.3
10. Sukhona	31.0	31.1	31.0	33.0
11. Northwest	32.0	35.4	32.0	35.3
12. White Sea--Onega	31.0	31.9	31.0	30.5
13. Pechora	30.0	30.1	30.0	30.9
14. Western	27.0	27.7	27.0	28.1
15. Irtysh	30.0	30.1	30.0	25.5
16. West Siberian	31.0	31.2	31.0	31.0
17. Yenisey	30.0	33.6	30.0	27.4
18 East Siberian	30.0	30.2	30.0	24.3
19. Amur	30.0	36.2	30.0	30.0
20. Lena United	27.0	28.5	27.0	28.0
21. Main Administration for Waterways	30.2	32.1	30.2	30.9
Total for the Ministry of River Fleet	30.7	32.2	30.8	31.0

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AMPHIBIOUS TRACTOR FOR ARCTIC

Moscow VODNYY TRANSPORT in Russian 15 Jan 81 p 2

[Article by N. Agoshkov, technical inspector of the workplace health and safety division of the Central Committee of the Trade Union of Maritime and River Fleet Workers, and A. Butorin, chief of the technical division of the Murmansk Maritime Shipping Company: "Arctic Transport: Obstacles in the Way of the Amphibious Tractor"]

[Text] The history of the birth of the TPG-1 goes back to 1963. It was then that the miracle machine which has no counterpart--the first amphibious tractor for production operations (but not transport), the TP-90, was created at the Onega Order of October Revolution Tractor Plant [OTZ]. There is an acute need for such a machine by workers not only in the timbering industry, but also many other industries: in the electric power industry and the building of power lines, the fishing industry, reclamation and water management, the river fleet, transport construction, and geology. And, of course, sailors working under the conditions of the Arctic Circle looked on the innovation with particular interest.

A launch is lowered from the deck of a ship (which usually cannot get close to the shore), and it is followed by the cargo pontoon. An ordinary tractor and containers are cautiously loaded on the pontoon by means of the ship's derrick. And thus a small caravan sets off for the land. It would be ideal if it was possible to bring up the pontoon in such a way that the tractor can leave it without drowning its engine. Then it would haul in its "lighter" and pull it up on land.... Usually this operation turns out to be more complicated: a sand bar blocks the way (it is shallow for the launch but deep for the tractor), or it may be a patch of ice.... Men have to get down in the water, rig up a tow line and pull it to the shore bit by bit.

And now we will present a different picture: it is not a pontoon that is "hitched" to the launch, but a "mixture" of the pontoon and a land tractor. If it is shallow, it will go through the shoals. If there is ice, it will push it aside. It leaves the water and goes up on land without stopping, pulls behind it a loaded "ferry," and then undertakes to unload it on its own.

Yes, seamen could only dream of such a helper. But it seems that imagination nevertheless will become reality....

In 1972 the Murmansk Maritime Shipping Company in conjunction with the Leningrad Central Project Planning and Design Bureau of the Ministry of Maritime Fleet called upon the Onega Tractor Plant to test the TP-90 "as an on-board service craft for unloading a supply ship on unimproved shores under arctic conditions." The management of the plant took up this request, and in early 1973 a contract was concluded between the OTZ and the Ministry of Maritime Fleet to conduct such tests. They were conducted in the vicinity of the Ob' Gulf during the trial cruise of the diesel vessel Sasha Kovalev. The TP-90 displayed at that time a number of valuable characteristics extremely necessary in unloading, moved pontoons from one mooring to another, towed them to the shore, pushed a pontoon on the water, hauled freight on sleds and in containers to storehouses, and did duty as a log pusher and winch. The floating tractor demonstrated high stability and good maneuverability on land and in the water, and displayed quite satisfactory seaworthiness (it towed pontoons from ship to shore over a distance of 10 km). As participants in the tests remarked, only the existence of the amphibious tractor made it possible to take loaded pontoons over bars into channels. The entire load was unloaded without losses or breakage.

One small matter remained: organizing industrial production of the miracle machine on a rush basis. But it was here that the misfire occurred.

Let us look at the newspaper PRAVDA on 2 February 1974, when it wrote: "In September 1969 the Ministry of Tractor and Agricultural Machinebuilding issued Order No 243, which called for series production of the TP-90 to begin in 1973. Another 2 months after that a joint decision was signed by that ministry and the USSR Ministry of Timber and Woodworking Industry to put the amphibious tractor into series production.... The subsequent fate of the tractor was sketched out in bright tones. It seems only the inventors of the innovation themselves--the personnel of OTZ--were hesitant to believe in success. They knew that production of another tractor model in the old shops was not possible, and construction of the new shops had not yet begun. Yet 1973 seemed far off at the time...."

Time confirmed the worst fears of the creators of the TP-90. There was no progress beyond experimental prototypes. The design began to become obsolete.

... Then came 1976. The head special design office of the Onega Tractor Plant, jointly with the Murmansk Maritime Shipping Company, designed the TPG-1, a floating cargo tractor which was a modification of the TP-90 to operate in the Arctic. Twenty percent of its components were altered or added, which reduced the percentage of standardization with the skidder tractor used as the base model to 52 percent. But this additional work qualitatively altered and supplemented the design of the machine: the body and cab were made splashproof, operating conditions were improved for the driver, a hydraulic clamp was designed for the pushbar, the transmission housing was reinforced, and the tractor was equipped with a boom for lifting cargo. In short, a design was achieved that would satisfy seamen with respect to all performance characteristics.

The shipping company, which did not hope for the drawings to turn into a real machine very quickly, reached agreement with OTZ that it would undertake to build the tractor with its own resources, with the help of the people of Onega, of course.

We will not go into all the ins and outs of the creation of the TPG-1: that would not fit in a few lines. We will only say that it actually did come into being with great labor pangs. Construction often came to a standstill for the most varied reasons: at certain points ship repair personnel were employed with more urgent jobs, or the Petrozavodsk suppliers did not send the complex castings they had promised.

But somehow finally that day in October in 1980 did come. Even before the "big" test, which we reported on at the beginning of this article, the tractor went through acceptance and delivery trials. They showed that the machine was altogether operable.

In front of us we have the "Protocol No 2 of the Concluding Session of the Commission for Conducting Interdepartmental Tests of the Prototype of the TPG-1 Floating Tractor. 16 October 1980, Murmansk." We will turn to the section entitled "Conclusions": "Having ascertained that the TPG-1 tractor (construction tractor No 1) does conform to the engineering design worked out by the Main Special Design Office of the Onega Tractor Plant jointly with the Murmansk Maritime Shipping Company, and conforms to the technical assignment as well, and having examined and discussed the items on the agenda, the commission deems it necessary to note the following:

"... The floating tractor has high maneuverability both on the water and on land, is easy to control, and possesses good stability.

"... Use of the floating tractor in the roadstead unloading of vessels at unimproved port points in the Arctic will make it possible to mechanize heavy manual labor and make it safe, to speed up the pace of unloading and to reduce the time ships stand in the roadsteads of polar stations...."

So, the principal conclusion is unanimous: a very useful and very necessary machine has been created, one that is highly effective and promises great economic benefits. After all, even now the TPG-1 can perform 10 (!) operations capable of ensuring the level of mechanization of roadstead unloading which is necessary at present. They include towing empty and loaded pontoons through shallows, moving the pontoons from one mooring to another, exploring the channel for the launch's approach to the shore, unloading the pontoon with the winch and the boom at the back, and so on.

Here is a marine version of the floating tractor! But....

In our view it is still early to beat the drum. No, it is not a question of those petty imperfections which were noted by the picayune interdepartmental commission--they are easy to correct. The matter is far more complicated. Everything turns on a simple question: But who will build these tractors? After all, it is not one that is needed, nor even dozens, but hundreds! It is no accident that the proposals of the commission contain this line: "Industrial construction of the floating tractors at one of the specialized enterprises in machinebuilding is deemed advisable."

The line is altogether relevant. But we recall that designing the floating tractor began back ... in 1960, 20 years ago! At that time man had not even gone into space. Indeed, this good machine was to have a difficult birth.

The draft of the CPSU Central Committee of the "Main Lines of the USSR's Economic and Social Development in the Period 1981-1985 and in the Period Up to 1990" specifically points to the importance of ensuring "timely delivery of necessary freight to the regions of the Far North and Far East," a task in which the new floating cargo tractor is called upon to help. In this connection we propose that in Section VI of the draft of the Main Lines ..., which speaks about furnishing specialized vessels to the maritime fleet, after the words "... railroad ferries, vessels for arctic navigation and icebreakders" the following words be inserted: "as well as other equipment for delivery of freight to unimproved shores in the regions of the Far North and Far East."

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OCEAN AND RIVER

ATOMIC TRANSPORT SHIPS PLAY IMPORTANT ROLE IN ARCTIC SHIPPING

Moscow IZVESTIYA in Russian 10 Dec 80 p 6

[Article by V. Shmyganovskiy: "The Arctic Express"]

> [Text] The USSR is building a new type of nuclear-powered icebreaking transport ship.

Many, many years before the atomic icebreaker Arktika reached the top of the globe Admiral S. O. Makarov, in a lecture entitled "Toward the North Pole — Full Speed Ahead," said the following: "Nature has locked our seas in with ice, but engineering today is giving us powerful means. We must recognize that the ice is not an insurmountable barrier to navigation." This prediction was comparable to K. E. Tsiolkovskiy's anticipation of space flight. It took about as long for it to be realized as it took to launch the first artificial earth satellite.

And today, sailing in the winter cold on snow-covered icebreakers guiding caravans through the "black storm" of the Arctic night, one gives tribute to those who spent many years perfecting not just the machinery, but also the actual transportation process in the Arctic.

It took a great deal of boldness to send ships into the Kara Sea in the winter. It also took precise engineering and economic planning.

For example, cargo going to the Yamal peninsula is not unloaded at well-equipped docks. It is set right on the shore ice. The pioneers there, the geologists, are supplied with everything they need. The year-round Murmansk-Dudinka line carries and delivers cargoes which formerly had to wait in port for six months. There are many such examples.

The seamen of the Arctic have accomplished much, but there are still many problems. One of them is the need to deliver cargo to hundreds of different places along the vast and harsh coastline. Transport ships sometimes spend months unloading the content of their holds onto local vessels. The work is disrupted by storms and the capricious ice which penetrates the mouths of the Siberian rivers.

Compared to conventional ships the Arctic lighter-container ship can be called an "Arctic Express." This ship carries dozens of large-capacity lighters, which are rectangular barges.

In the mouths of the rivers the ship's crane quickly puts some of the lighters on the water and the lighter ship, without further delay, travels on. Tugs form the barges into caravans and conduct them to their destination points upriver. On the return trip the mother ship gathers up the lighters again. There is no downtime for cargo-handling operations! Its reinforced icebreaker class, displacement of 61,200 tons, and 40,000-horsepower power plants permit the lighter-container ship to break its way through quite heavy ice on its own.

The Arctic has never before seen such a transport ship. It will be one of the largest in our fleet by dimensions.

"The growth of national economic shipping in the Arctic region," says T. B. Guzhenko, USSR minister of the maritime fleet, "demanded new efforts to build a reliable transportation system. Operations with the nuclear-powered ships Lenin, Arktika, and Sibir' demonstrated the efficiency of their reactors and the possibility of using them as power plants for other giant icebreakers and transport ships. This is especially important, for with all respect to icebreakers, they are very poorly suited for shipping cargo. They have a different purpose."

Of course, it costs more to build nuclear-powered ships than diesel and gas turbine ships. But considering the steadily rising costs of organic fuel, ships with large atomic power plants are becoming competitive.

"The International Maritime Consulting Organization is now working out a 'Safety Code for Nuclear Transport Ships.' At present it is only a draft. Are its possible requirements being taken into account in the design of new lighter carriers? What can be said directly about the power plant of a new ship?" the minister was asked.

"Both the ship and its atomic power plant will meet the highest safety standards.

I want to emphasize," T. B. Guzhenko said in conclusion, "that the construction of such vessels is contemplated by the draft document 'Basic Directions of Economic and Social Development of the USSR for 1981-1985 and Until 1990.' This document reflects the considerable experience we have accumulated with the use of nuclear powered ships in a period of more than 20 years.

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INCREASING OUTPUT OF NEW FAR EASTERN PORT

Moscow IZVESTIYA in Russian 16 Dec 80 p 1

[Article by A. Pushkar', Vladivostok: "The Port Is Building up Its Capacity"]

> [Text] "Begin construction of the second phase of the deep-water Vostochnyy Port" — from the draft document "Basic Directions"

"Vostochnyy Port." These words were first used when it was decided to build a major new port near the city of Nakhodka, a port that would be the access of the Baikal-Amur Mainline to the Pacific Ocean. And now the formerly barren shore of Wrangel Bay has been built up with docks and giant cargo-handling complexes. This is the first phase of the port. It has timber, wood-chip, container, and coal docks with a high level of mechanization.

The process of loading wood chips and coal here has been fully automated. For this reason dock workers at Vostochnyy Port need only two minutes to unload a coal car whereas the usual norm is 30 minutes. This port can load large vessels in hours, not days, as is the case at other ports: 6,000 tons of coal is put into the holds of the ship every hour. The efficient stacking method is used for shipping timber here and the container terminal has an automatic control system for container traffic traveling in the great transportation arc: Southeast Asia — Western Europe.

The "automatic pilot" has also begun working. This is the country's first automatic system to pilot ships.

A small city of the original builders of the port has arisen in Wrangel Bay. It has a club, a school, and a nursery school. Construction is now underway on a large housing development for 30,000 inhabitants. Plans for the near future include the construction of schools, nursery schools, a movie theater, a hothouse system, a hotel for sailors, a Pioneer camp, and a preventive health clinic. As V. Petkov, deputy chief of the Far Eastern Steamship Line, told us, the second phase includes the construction of five more docks.

The draft document "Basic Directions" aims at accelerated development of the container transportation system. The projected capacity of the terminal operating in Vostochnyy Port has already been surpassed and the flow of containers from Japan and other Southeastern Asian countries is growing. After all, the route using the Transsiberian Railroad is significantly shorter than the sea route through the Indian and Atlantic oceans. It is advantageous for companies carrying on business with Western Europe and the Middle East. Plans envision the construction of three more large terminals in Vostochnyy Port. This will make it possible to quadruple the transshipment of containers. An enormous new coal complex with a capacity of 5 million tons a year will also be built. It will handle Southern Yakut coal delivered along the Baikal-Amur Mainline. Timber, rolled metal, and equipment will be handled at the general cargo stock. Powerful tugs capable of mooring giant ocean-going vessels will appear in Wrangel Bay.

Upon completion of the projects of the second phase Vostochnyy Port will become the largest port in our country in terms of volume of annual cargo turnover.

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CHANGES URGED IN RIVER TRANSPORT SYSTEM

Leningrad LENINGRADSKAYA PRAVDA in Russian 25 Dec 80 p 2

/Article by N. Semenov, Chief of the Northwestern River Steamship Company: "Strengthen the Might of the Fleet"/

/Text/ For the group of the Northwestern River Steamship Company the years of the 10th Five-Year Plan were filled with highly intensive work. During this period cargo turnover increased by 29 percent. The entire growth was achieved by means of increasing labor productivity. The volume of cargoes switched over /transferred/ from railroad to river transport reached 9 million tons. The extension of the shipping season on inland waterways and the wintertime utilization of "river-sea" combined navigation vessels ensured the annual haul of an additional 2.5 million tons of cargo. All this allowed us to complete the five-year plan assignment two months ahead of the deadline.

With a feeling of pride for the great deeds which lie ahead for our people, the workers of this steamship line received the draft plan of the CPSU Central Committee for the 26th Party Congress. It has presented serious tasks for river transport: the latter's cargo turnover must be increased by 19--20 percent.

Presented as one of the principal tasks is further improvement in the planning and organization of the hauling process and in its administration.

In fact, quite a few difficulties still arise because of a lack of balance in the plans and their insufficient technical support, along with an incompleteness of the value indicators. For this reason, let's say, the so-called combined hauls, in which several types of transport take part, despite their high degree of efficiency, have turned out to be "alien" for many of those taking part in the process. In the ports of the Ministry of the River Fleet alone at the end of this year's shipping season there remained millions of tons of cargoes which had not been unloaded by the railroad. The following paradox has come about: in planning for a year ahead everything semms to be coordinated--the tonnage, the reserves of rolling stock, the mechanized means, and the warehousing. Then why is it that cargoes constantly pile up at the trans-shipment points?

Evidently, the volumes of the hauls and trans-shipment are not always coordinated with the possibilities of certain types of transport specifically for various times of the year. Moreover, provisions are not made for the possibility of new situations arising, which could be caused, let's say, by the harvesting of high crop yields or the need to carry out hauls which are important for the state.

At the present-day stage the coordination of all types of transport is impossible without the widespread introduction of new equipment and automated control systems. A great deal has already been done in this plan. However, the automated control-system sub-systems which have been developed by various departments are basically directed at solving individual problems, and they do not provide the technology for coordinating the work of contiguous types of transport.

/In our opinion, in developing the automated control systems of contiguous types of transport it is necessary to provide for the mutual coordination of the sub-systems being worked out and the complexes of problems./ [in boldface]

It is high time to solve the problem of improving the organizational structure of the administration of our country's river transport. Today its management is carried out by the republics. At the same time the operation of the country's river fleet, beginning with the planning and administration of all the hauling processes, is structured in direct contact with the Union Ministries of the Maritime Fleet, Railways, and others. This complicates everything and makes the work difficult. The unified waterway transport system turns out to be organizationally disconnected. Hence, there are also many complications in mastering new cargo flows and in switching hauls over from one form of transport to another. Departmental disconnectedness likewise complicates the re-equipping of inland waterway transport, the development and creation of mutually coordinated sizes of the waterways and those of the structural components of the navigational facilities, as well as many other problems.

Substantial changes are required in the methods of planning the operation of transport, as well as in the principles of the economic and legal interrelations between the shippers and the receivers [consignees] of cargoes, as well as with the participants in combined hauls. In particular, the annual planning is now based on the manifests [orders] of the shippers. But if they do not show the amount of goods provided to be hauled, then nobody bears any responsibility, and, in this case, the transport workers are the ones who suffer primarily; they are compelled to seek out possible ways to cover the gap which has appeared in the plan.

/We must sharply raise the level of mutual responsibility between transport and the cargo-owner. The two sides must help each other to make up the losses which are connected with the violation of mutual obligations: one side for cargoes not fully delivered, and the other side for cargoes which do not show up for shipment./ [in boldface]

There remains the urgent question of determining the principal indicator of the activity of the transport sectors. We consider that /for the transport organizations the principal value indicator should not be the cargo turnover but rather the volume of cargo hauls in tons for an assigned products list and in accordance with the direct agreements between the transport and the cargo shipper./ [in boldface]

One of the main tasks set forth in the 11th Five-Year Plan is the further switchover of cargo hauls from railroads to other types of transport, including the river fleet. But here a great deal depends not only on us. We are seriously disturbed by the unsatisfactory condition of the cargo-handling complexes which belong to individual enterprises and departments. Thus, the landings of Glavlenstroymaterialy on the Svir' and Lake Ladoga, which were built more than 20 years ago to serve a low-tonnage fleet with a low intensity of cargo operations, are clearly not equipped for modern vessels of the "Volgo-Balt" and "Volgo-Don" types. Also in need of reconstruction are the landings of the Mill Combine imeni S. M. Kirov. Despite the obvious profitability of waterway hauls, no hurry is being made to take advantage of the services of the river workers by the Kirovskiy Plant Association or the Bolshevik Plant; the landings which they have here are not in operation.

An important reserve for increasing the cargo hauls by river transport is extending the shipping season on inland waterways. It should be borne in mind that increasing it by 15--20 days allows us to haul as much as an additional 2 million tons of cargoes which now must be delivered by more expensive types of transport--railroads and trucks. However, extending the shipping season is frequently hindered by a shortage of heavy-duty icebreakers. As of now, the river fleet is acquiring them too slowly. Furthermore, we must urgently step up the construction of such cargo vessels as are capable of operating independently under icy conditions.

One of the important trends in raising the efficiency of the transport process is specialization of the fleet: building container carriers, vegetable carriers, truck carriers, and vessels for hauling heavyweight trains. For the time being, the construction of such ships is proceeding at an extremely slow pace; containerized and package-type hauls are also being introduced too slowly in the river fleet. As a result, the throughput traffic capacity of today's dry cargoes has been reduced by 60--70 percent.

This steamship company has worked out a program of containerization and packaging of cargoes for the 11th Five-Year Plan which will allow us to increase the volume of hauls by 26 percent by means of advanced technology. But here also we will have to encounter considerable difficulties. Suffice it to say that in the Leningrad Transport Complex the turnover time for river-type containers amounts to more than 20 days, as compared to a norm of 13. Late deliveries by truck transport have an adverse affect, and the clients have not organized their work on a round-the-clock basis nor on days off. Utilization is not made of containers in combined railroad-waterway transportation because of the lack of legal bases between the Ministry of Railways and the Ministry of the River Fleet.

It is well known that during the summertime many vegetables perish because they are delivered too late to the trade network. Unproductive idle times are permitted for the fleet and truck transport during cargo-handling operations. This could be avoided if fresh vegetables were delivered in containers. But, unfortunately, there are no such containers. And this problem is of such a nature that it must be solved on a national scale. To our way of thinking, the Basic Trends should include the following notation: /"Ensure the manufacture of special containers for hauling vegetables and melon-type crops"/ /in boldface/

The Basic Trends have provided for the addition of "river--sea" combined-navigation vessels. In our opinion, Section Six should add the following words: /"Ensure the construction of 'river--sea' vessels with a larger cargo capacity, capable of sailing on the seas and any inland waterways."/ /in boldface/

The group of the Northwestern Steamship Company understands the importance of the tasks set forth in the draft plan of the CPSU Central Committee for increasing the operational efficiency of river transport, and it will make a worthy contribution to their solution.

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MISCELLANEOUS

TRANSPROGRESS PNEUMATIC TRANSPORTATION SYSTEM

Moscow GUDOK in Russian 20 Jan 81 p 4

[Article by A. Skorobogatov]

[Text] "Start!" And train traffic opened immediately after this command on the 17-kilometer section of the Lilo-2 automated pneumatic line. The trains rushed through pipes laid between the Shulaveri Quarry and the reinforced concrete products plant at Marneuli. Each train was made up of eight container rail cars and two pneumatic locomotives linked on the ends of the train. Moving under pressure of no more than 6/100ths of an atmosphere, they each transport 30 tons of crushed stone per trip at a speed of more than 40 kilometers per hour. Thus, industrial development of yet another installation for pneumatic pipeline transport of the Transprogress system was begun recently in Georgia.

The Lilo-2 will permit annual transport of 225,000 tons of bulk materials, while the annual volume of shipments will reach two million tons with startup of the second unit 40 kilometers long. The saving from introducing it will comprise no less than 3.5 million rubles.

The problem of accelerating introduction of continuous and new specialized types of transport--conveyor, pneumatic container, hydraulic and others--was posed in the draft of the CPSU Central Committee to the 26th Party Congress. Our correspondent requested the chief engineer of the Transprogress SKB [Special design office] Yu. Tsimbler to relate how it will be resolved. Three pneumatic container railroads--the single-track Lilo-1 and double-track Lilo-2 in Georgia and also a pneumatic container system in Tul'skaya Oblast--have now been developed from the designs of our SKB. It provides the asphalt-concrete plant of Minavtodor [Minstry of Highway Construction] of the RSFSR at Berniky with the necessary amount of concrete aggregate. The total length of these main lines already comprises more than 20 kilometers. But this is only the beginning. We are now designing a third unit of Lilo-2. It will link the main two-pipe pneumatic line to the Imri Quarry.

"A scientific-experimental and experimental-production base of the Transprogress SKB was developed several years ago at Orekhovo-Zuyevo. What work is now being conducted on this test area?"

"This road four kilometers long is helping specialists who develop more improved equipment for the second-generation Transprogress systems. Solution of this problem is the main task which was posed to the collective of the SKB during the 11th Five-Year Plan. Moreover, an industrial base must be created to produce high-quality Transprogress systems in order to turn them over to customers "under key." Construction of a special plant has been planned at Vladimir for this. Serial production of equipment will be organized in its shops, beginning with means of automation and ending with rolling stock. It is planned to open this enterprise at the end of the 11th Five-Year Plan. During the year the plant will produce 20 completely outfitted systems designed mainly to transport bulk goods. The economic feasibility of pneumatic railroads of this designation can be confirmed by the following fact. Just one 12-kilometer line with productivity of three million tons of crushed stone annually frees 65 dump trucks and 260 drivers and mechanics-fitters."

"And what else can be transported by pneumatic railroads?"

"Manufacture of equipment has begun at the Orekhovo-Zuyevo base for intraplant transport systems. These pneumatic container railroads have already been designed for two enterprises at Penza and Saransk. Simultaneously with this two new experimental installations of the pneumatic container and vacuum type have been developed. An 11-kilometer pneumatic railroad at Leningrad will begin to operate on a prototype of the first of them in the near future. Domestic wastes will be transported to the sewage treatment plant at Gorelovo by this installation in special container cars. The second installation--for vacuum collection and transport of domestic wastes--will be used in Moscow, Leningrad and Minsk. It is planned to organize delivery of various types of literature from book repositories to reading rooms of the State Library imeni V. I. Lenin at Moscow and the public library imeni Saltykov-Shchedrin at Leningrad on rectangular pneumatic lines."

"Technical-economic justification with which construction of the world's first pneumatic express passenger line of the subway was envisioned, was developed several years ago with participation of our SKB at Moscow."

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MISCELLANEOUS

BRIEFS

PIPELINE TREATMENT--Minsk--A coating which prevents clogging of petroleum pipelines with paraffin has been developed and introduced by scientists of Belorussia. Special enamels which coat the pipes on the inside are now used in the oil fields where the equipment had to be stopped up to three times per day and the pipelines had to be cleaned. They do not permit the impurities to precipitate out in the pipelines. The annual saving from introduction of the innovation comprised one million rubles. [Text] [Moscow GUDOK in Russian 20 Jan 81 p 1] 6521

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